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CHANGES IN BODILY FORM OF DESCENDANTS OF IMMIGRANTS

By FRANZ BOAS

MESSRS. G. M. MORANT and Otto Samson have published in *Biometrika*, Vol. 28 (1936) pp. 13 et seq., a detailed discussion of my report on *Changes in Bodily Form of Descendants of Immigrants, 1912*. Although I believe that the question of stability or instability has been definitely settled by the experiments of Eugen Fischer on rats and by the results obtained by H. L. Shapiro in a study of the changes in bodily form of Japanese immigrants, the disinclination of many to accept the legitimate demand that the stability of anthropometric traits in different types of environment should be investigated before it can be assumed as self-evident makes a reply to the new criticism desirable.

The complaint that the method of taking the measurements of length and breadth of head and of zygomatic diameter has not been described is irrelevant because there is complete agreement among anthropologists in regard to this method: maximum length is the distance from glabella to occiput, transversal diameters are maxima. The difficulty is rather that notwithstanding detailed instructions, personal equations are not negligible. Differences in the amount of pressure, failure in obtaining complete symmetry, failure to move over a sufficiently wide area in transversal measurements are all sources of error which can be obviated in a staff of observers solely by constant mutual control. Although Dr. Fishberg, whose book is discussed in the same paper, was instructed by me, there was no constant control and for this reason slight differences between his results and those of my observers are likely. For this reason also I did not use his data in a detailed comparison with mine.

The authors lay particular stress upon the point that East European Jews are not homogeneous as indicated by Fishberg's and my own tables. In order to strengthen their point the authors have calculated with unnecessary exactness the standard deviations of the data given by me on pp. 247–249 of my report. Since the approximate value of the standard error can be told at a glance from these tables and since this approximation

is sufficient to form a judgment of the significance of the difference, I did not print them.

However, an important theoretical question is involved. The authors seem to think that the statistical *error* of the average of a sample has a meaning except for that sample and that it is the same as the *variability* that would be obtained if more samples were taken. This would be true if it were possible to collect identical samples, or if the whole of Galicia, Poland and so on were each absolutely homogeneous. Actually, taking into consideration the shifting centers from which emigration proceeds no two series would be composed in an identical way, so that, besides the statistical error, this variation must be taken into account. I have shown that the standard variability of family lines for the cephalic index of East European Jews is ± 2.29. The most closely inbred group I have been able to find are the South African Bastards with a family line variability of ± 1.26. European groups, like Bohemians or Scotch have a family line standard variability of more than ± 2.00. The lowest European value is the one obtained from Frets' Dutch series 1.95.[1] On account of the irregular distribution of family lines, a shifting of the areas from which immigrants proceed, and the differential effects of causes of selection of immigrants, we are not allowed to assume that the statistical error is equal to the variability of the immigrating groups.

Added to this is the difficulty of a satisfactory classification of areas of provenience. I stated in my report that on account of intermarriages of the immigrants from Eastern Europe, regardless of their provenience from Galicia, Poland, White Russia, etc., the classification was unsatisfactory. I do not see why the authors should consider this statement as obscure. There are also many for whom the only information available is that they were born in Russia.

In my report (p. 65) I have shown that the head measurements of immigrants for quinquennial periods from 1880 to 1909 show no appreciable difference and this justifies our method of treating them all as a unit. The corresponding table given by the authors (Table VII) adds nothing new.

In their further discussion of the homogeneity of the material the authors say that "of the total of 799 adult Jews measured for the Immigration Commission 733" (according to Table XVII, p. 373 of Final Report, 730) "are known to have been born in Eastern Europe, 39 were born in America and some of the remaining 27" (34 according to my count) "may have been born in Germany." This is an error. Those simply marked

[1] (American Anthropologist N. S. Vol. 18, 1916), p. 9; (Anthropologischer Anzeiger, Vol. 7, 1931), pp. 207, 208; *The Cephalic Index in Holland* (Human Biology, Vol. 5, 1933), p. 592; *The Mind of Primitive Man, Revised Edition* (1938), p. 61.

Russia or Eastern Europe could not be included in the classified table of East European countries (p. 373 Final Report, hereafter called FR).

In regard to the 39 American born adult Hebrews the authors suggest that they must have been descendants of German Hebrews because they had arrived here before the influx of East European Jews began. According to my records there are, among these 39, one whose father is from Saxony, mother from France, and two whose ancestry could not be ascertained. The rest are descendants of East European Jews from Lithuania, Poland, Galicia, White Russia, Ruthenia, Hungary, Roumania. A few are simply marked "Russia."

In the discussion of the actual measurements the authors lay much stress on the influence of the changes of the cephalic index in adult life, and on the problem in how far it is possible to reduce the observed index of children and of females to adult male standards.

The age factor in adult life is not negligible. The authors call attention to the greater length of head of the older Jewesses (p. 18). A. Hrdlička finds for "Old American" men a length of head of 197.1 mm. for 91 men 22–29 years old; combining his group of 156 from 30 up we find 198.3[2]; for women the corresponding values are 185.5 and 186.6. My own material collected for the Immigration Commission gives the following results:

	Males		Females	
	20–25	26+	20–25	26+
Hebrews				
Foreign born	187.0 (187)	187.5 (573)	177.7 (168)	179.8 (628)
American born	188.4 (27)	189.7 (12)	178.8 (27)	180.1 (15)
Sicilian				
Foreign born	191.8 (175)	192.3 (667)	183.5 (242)	184.8 (705)
Neapolitan				
Foreign born	189.9 (79)	189.1 (433)	179.3 (104)	181.7 (528)
Bohemian				
Foreign born	188.7 (47)	189.8 (450)	178.2 (76)	180.7 (598)
American born	188.6 (56)	188.0 (60)	178.7 (96)	178.7 (71)
Slovak and Hungarian				
Foreign born	188.0 (21)	186.8 (143)	177.6 (26)	179.6 (161)
Poles				
Foreign born	190.1 (30)	189.3 (113)	179.6 (30)	181.2 (134)
(The last four groups combined)	188.8 (154)	189.0 (766)	178.5 (228)	180.4 (964)

The question is, in how far these increases may influence the results. The width of head does not show appreciable changes so that the cephalic

[2] *The Old Americans* (Baltimore, 1925), p. 133.

index for the older group must be slightly lower than that of the younger group.

The various series published in FR give for the cephalic index of two age groups the following results, the difference meaning the excess of the younger group over the older one:

	20–25	26+	Difference
Jews, Male	82.8 (214)	82.9 (584)	−.1
Female	84.0 (195)	83.3 (643)	+.7
Bohemian, Slovak, Hungarian and Pole, Male	83.2 (155)	83.6 (767)	−.4
Female	84.9 (230)	84.1 (965)	+.8
Sicilian Male	77.9 (177)	77.7 (666)	+.2
Female	78.1 (249)	77.8 (707)	+.3
Neapolitan Male	80.8 (79)	80.8 (433)	.0
Female	81.2 (104)	80.6 (530)	+.6

or, on the average +.29 units of excess for the younger group over the elder group. Since the parents of adults range around 45 years of age and the length of the head seems to increase slightly even after 26 years while the width of head remains constant, a comparison between parents and their own adult children would be expected to show a lower value for the cephalic index of the parental generation. My Table XXIX (pp. 485 *et seq.*) shows this phenomenon. The values for women have been made comparable with those for males by subtraction of .6 units

Father—Son>20 yrs.	− .5 (69) corrected	−.5	−.5
Father—Daughter>18 yrs.	−1.0 (120) corrected	−.4	
Mother—Son>20 yrs.	+ .2 (76) corrected	−.4	
Mother—Daughter>18 yrs.	− .5 (127) corrected	−.5	

This is the "unexpected conclusion" reached by the authors (p. 29). They continue: "The American-born adult Jewish children measured for the Immigrant Commission had a lower cephalic index than their parents, but the difference need not be considered significant, while the foreign-born Jewish adult children tended to have higher indices than their parents, and the difference in this case appears to be statistically significant." It is curious that the authors do not apply their own argument regarding the changes of head-measurements in adult life to these findings. I regret that I did not lay more stress on this point, which strengthens the validity of my data. The data given above show that we must expect a difference between parents, on the average 45 years old, and their adult children who will be slightly more short-headed. This will be true for both American-born and foreign-born. When we compare the foreign-born parent with his or her American-born adult child we have to deduct a certain amount, between .3 and .5 units from the cephalic index of the American-born child,

so that the difference between parent and child is still further increased. For foreign-born parents minus their own American-born adult children, we obtain the following values:

Father—Son > 20 yrs.	+ .3 (18) corrected + .3
Father—Daughter > 18 yrs.	− .7 (36) corrected − .1
Mother—Son > 20 yrs.	+3.1 (15) corrected +2.5
Mother—Daughter > 18 yrs.	+ .6 (31) corrected + .6

on the average +.56.

If we allow for the decrease of cephalic index between 20 and 45 we have to add a value of from .3 to .5 to the difference of .56 and find the difference between parent and American-born adult child between .86 and 1.06.

The comparison of foreign-born and American-born children of the same age classes, from 5 to 15 years gives an average difference of about 1.8 units. If there were no actual difference, the probability for every year of finding a positive or negative difference would be equal. Here we find for 16 entries for corresponding ages every time the foreign-born considerably more round-headed than the American-born. The authors may calculate the probability of this being due to chance. If the probability of a difference were variable, why should it always be negative?

The discussion on p. 26 *et seq.* of the authors' review is based on a careless reading of my report. On pp. 117 FR, I explain the meaning of the table. "If d expresses the difference between parent and his own child of a certain age, if the particular age is indicated by $_t$, and $_f$ indicates foreign-born, and $_a$ American-born, then the figures entered in our table signify

$$d_{t,f} - d_{t,a}.$$

The claim that table XXIX (p. 485 FR) requires corrections is wrong. The table gives the average difference between the parent and his or her own child for every year of the age of the child, first for American-born, then for foreign-born. The differences between these values are used as criteria. The summary given on p. 124 FR shows that for every single age the differences between parents and their own American-born children are considerably greater than the differences between parents and their own foreign-born children—without any reduction. The use made of this material by the authors necessitates reductions while mine does not. If the authors had looked at the tables of absolute measurements on pp. 479 *et seq.* FR, they would have seen that no reductions are involved. I chose this method because a direct comparison between siblings without reductions is impossible. The differences between parents and children refer, of course, to every set of parent and child that I had, so that there are included parents who had both American-born and foreign-born children, as well as those who had only

American-born or foreign-born children. The same parents and the same children appear wherever they belong according to the classification of father or mother and son or daughter.

The authors discuss in detail the troublesome question of the reduction of the cephalic index of children to the adult type which is unavoidable in a direct comparison between parents and children. I have discussed this matter in detail (pp. 137 et seq. FR) and have shown that the rates differ for different series. The authors here overlooked that, as explained on p. 140, the values for groups 26 years and over in Tables 59 and 60, pp. 145, 146, were not obtained by observation but calculated by applying the total observed increments in Table 54 to the available observations on children of various ages, and that I have shown that the same rates cannot be applied to different series (p. 139). In a recalculation of Dr. G. P. Frets' material[3] I pointed out that the reduced values obtained from children give too high variabilities due to the errors introduced by the assumption that all children grow in the same way. Since the average decrease per year for male Hebrews was found to be .15 units, for females .14 units (p. 139 FR) while the average for all available series is about .12, the corrected values will give a better picture than uncorrected values. I presume on account of the uncertainty of reductions the authors disregard the observations on children. On p. 67 FR I give observations for each year of immigration from 1870 to 1909 for reduced values of the cephalic index for foreign-born and American-born. The two groups always refer to the immigrants themselves and to the children of immigrants who arrived in that particular year. On p. 108 an additional correction is entered in which account is taken of the gradual decrease of cephalic index according to the time elapsed between the immigration of the mother and the birth of the child. On the average this indicates a decrease of .77 units for the cephalic index for American-born, born at the time of immigration. The authors do not pay any attention to this decrease which shows in reduced values the cephalic index of foreign-born to be 1.2 units *over* the general average; of those born less than ten years after the arrival of mother .2 *under* the general average and of those born more than 10 years after arrival of mother 1.0 *under* the general average.

Admitting the uncertainty of the small values involved in the reduction of children and females to male adults, it must be borne in mind that the same kinds of errors are made by using inaccurate reductions for both, American-born and foreign-born.

To sum up the claims made in the conclusions presented by the authors (pp. 31, 32):

[3] *The Cephalic Index in Holland and its Heredity* (Human Biology, Vol. 5, 1933), pp. 587 *et seq.*

IV.[4] The categorical statements "that the data for unrelated adults provide no evidence for the effect of environment" (p. 23) and that "they show some differences between means for different age groups and between groups arriving in New York at different periods"; that "by pooling together all the immigrants, Professor Boas lessens the chance of reaching any exact conclusions regarding modification of types from measurements of adults" (pp. 30, 31) are not justified. I have explained before that no degree of subdivision according to geographical areas could improve to any appreciable extent the homogeneity of the series. I have shown that the annual changes in composition of the immigrants are slight and irregular and have tried to obviate this influence by comparing the immigrants of one year with their descendants of the same year. The consistent differences between American-born and foreign-born children of the same ages have not received any attention on the part of the authors.

V. It is incorrect that "a comparison of the adults born in the United States with all the immigrants is primarily one between Jews of German and 'Russian' origin, in all probability." It is also against all reasonable procedure to claim that "nothing can be inferred from comparison of the adult series of unrelated individuals with regard to possible modification of type due to changing environmental conditions." By showing the persistence of the same type of difference for all ages a problem is set that is in itself highly suggestive, if not conclusive, and which I tried to support by the study of families.

VI. Granting the uncertainties of age corrections, the authors overlook that the inferences drawn from series with age corrections are corroborated by other series, in which no correction is used. The decrease of cephalic index of the adult which continues after the 26th year brings it about that the adult foreign-born child of the foreign-born immigrant is more short-headed than his parents. Since the same condition prevails among the American-born, the cephalic index of the American-born adult has to be reduced by the same amount when comparing it with that of his parent. Thus the difference in favor of the long-headedness of the American-born is increased by the difference between the cephalic index of the older parental group and the descendant groups as determined by their difference in age.

This additional correction makes the results for Sicilians and Neapolitans more doubtful. However, I cannot enter into this subject at the present time.

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[4] Nos. I–III refer to the Fishberg series which is irrelevant in the present consideration.

A PROBLEM IN KINSHIP TERMINOLOGY

By E. W. GIFFORD*

DR LESLIE A. WHITE, in his paper on *A Problem in Kinship Terminology*,[1] settles the problem to his own satisfaction with the following formulation concerning certain types of kinship systems (p. 569):

The type which violates the generation principle is an outgrowth of the type which does not, and is due to the influence of a fully mature, influential clan system. When the clan system is young and weak the kinship system will be of the Dakota-Iroquois type, regardless of the sex in which descent is reckoned. As the clan system develops, however, and comes to exert its influence more and more upon the social life of the tribe, the Dakota-Iroquois terminology will be transformed into the Crow type in a matrilineal society and into the Omaha type in a patrilineal society.

The exceptions to this dictum as to the process of evolution in these kinship types are explained in part by Dr White by the "additional factor" of diffusion (p. 570).

"The systems of terminology which 'override the generation principle' do so because the clan predominates over the family as the agency which determines how the relative shall be designated at those points where the generation principle is violated" (p. 568). It is not clear to me whether Dr White means to embrace moiety also in his use of the word "clan." He proceeds to ask the question: "Why is it that in some tribes with clans the generation principle is violated while in other tribes with clans it is not?" This is an oversimplification of the problem, for the converse of this question should also be asked: "Why is it that in some tribes *without* clans the generation principle is violated while in other tribes with clans it is not?" No doubt the prompt answer to this second question will be: "Diffusion." In such case the burden of proof lies with the answerer.

Family and kinship system are universal to mankind and belong in that underlying stratum of social phenomena which Professor Kroeber has aptly called "basic pattern."[2] Obviously, clans and moieties, with their limited distribution would fall under the caption of "secondary pattern." Viewed in this light, Dr White's problem becomes part of a more general one, to wit: The manner and extent in which secondary patterns of social structure and basic patterns of social structure interact upon one another. That the

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[1] American Anthropologist, N.S., Vol. 41, pp. 566–573, 1939.

[2] A. L. Kroeber, *Basic and Secondary Patterns of Social Structure* (Journal of the Royal Anthropological Institute of Great Britain and Ireland, Vol. 68, 1938), pp. 299–309.

two patterns do affect one another would seem indubitable, but that the case is always so simple as Dr White posits for his limited problem is unlikely.

It seems to me that the situation may be precisely the reverse of that set forth by Dr White and that "overriding the generation principle" in the Omaha and Crow types of kinship systems may be regarded as one of the several basic patterns of kinship terminology. In some groups where the secondary pattern of clan organization has come into existence, "overriding the generation principle" fits in with unilineal reckoning, which is a fundamental of clanship. Indeed, it might be conceived of as a factor in fostering the growth of clan organization, rather than that clan organization is the cause of "overriding the generation principle."

As case material to substantiate my remarks I present some examples, all from western North America and all from groups investigated by the writer in various connections. These limitations are purposeful, but not necessary, for numerous other examples of equal diversity can be culled from the literature. The reason the limitations are purposeful is that the examples are ample to establish my points: (1) that clans are associated with types of kinship systems other than the three that Dr White mentions (Dakota-Iroquois, Omaha, Crow); (2) that all types of kinship systems (including Crow and Omaha) enumerated by Professor Leslie Spier[2] occur in tribes without clans; (3) that certain types of kinship systems besides Dakota-Iroquois occur among tribes with both patrilineal and matrilineal clans; these types are Yuman and Mackenzie Basin.

The following listings are taken from, or based upon, Professor Spier's classification of kinship systems.

Omaha Type Kinship Systems.—Ten north central Californian groups without clans or moieties and six south central Californian groups with patrilineal moieties have kinship systems of this type. Are we to assume that the kinship system is due to moieties and that it spread from the groups with moieties to those without? I fail to see why such an assumption is necessary or even valid when it is noted that patrilineal moieties are found among the Southern Californian Shoshoneans and the Piman peoples who have kinship systems of totally different type.

The north central Californian groups without clans or moieties are Northern Wintun (Wintu), Central Wintun (Wintun), Southeastern Wintun (River Patwin), Southwestern Wintun (Hill Patwin), Coast Miwok, Lake Miwok, Northern Pomo, Central Pomo, Eastern Pomo, Southeastern Pomo.

[2] Leslie Spier, *The Distribution of Kinship Systems in North America* (University of Washington Publications in Anthropology, Vol. 1, 1925), pp. 69–78.

The south central Californian groups with patrilineal moieties are Tachi Yokuts, Gashowu Yokuts, Chukchansi Yokuts, Southern Miwok, Central Miwok, Northern Miwok.

Crow Type Kinship Systems.—The writer has worked with only three peoples with kinship systems of this type; the Hopi with matrilineal clans, and the Southern Pomo and Wappo without clans or moieties. The Navaho neighbors of the Hopi have mtarilineal clans coupled with a kinship system of Iroquois type. Will the kinship evolution of Dr White's hypothesis, hastened by diffusion from the Hopi, ultimately transform the Navaho kinship system into one of the Crow type?

Yuman Type Kinship Systems.—Peoples with this type of kinship system exhibit a great diversity of social organization. Some are without clans or moieties, some have patrilineal moieties, some have patrilineal clans, and some matrilineal clans. What social law will account for such diversity of "cause" and uniformity of "effect"?

Without clans or moieties are the Luiseño, Kawaiisu, Tübatulabal, Southwestern Pomo, Western Yavapai, and Northeastern Yavapai.

Without clans or moieties, but possessing patrilineal lineages or hordes are the Kamia, Southern Diegueño, and Northern Diegueño.

With patrilineal moieties are the Desert Cahuilla, Cupeño, Serrano, Pima, and Papago.

With patrilineal clans are the Mohave, Yuma, Cocopa.

With matrilineal clans are the Southeastern Yavapai.

Mackenzie Basin Type Kinship Systems.—Again, this type of kinship system cannot be correlated with a single type of social organization.

Californian groups without clans or moieties and having this type of kinship system are Hupa, Whilkut, Yuki, Huchnom, Coast Yuki, Lutuami, Achomawi, Atsugewi, Washo, Southern Maidu, Northern Paiute, Eastern Mono (Owens Valley Paiute), Paleuyami Yokuts, Yaudanchi Yokuts, Yauelmani Yokuts, and Karok.

One Californian people, the Western Mono have this type of kinship system coupled with patrilineal moieties. The Zuñi have it coupled with matrilineal clans. Who will say whether the Zuñi or the Hopi matrilineal clan system is the older? From Dr White's viewpoint the Hopi system should be the older because it is accompanied by the Crow type of kinship system.

Iroquois Type Kinship System.—In California the tribes with this type of kinship system, unlike Dr White's Iroquois example, lack clans, thus evoking the question of just why this type should be regarded at all as a manifestation of the presence of clan organization.

The Californian groups are the Tolowa, Lassik, Wailaki, Kato, Shasta, Northern Yana, Yahi, Northeastern Maidu, and Northwestern Maidu. The Athabascan Navaho, unlike the above mentioned Californian Athabascans, have the type coupled with a matrilineal clan organization. According to Dr White's statement the Navaho kinship system should in due time change to the Crow type system of their Hopi neighbors.

With matrilineal clans connected with three types of kinship systems other than the Crow, and patrilineal clans and moieties connected with two types other than the Omaha, it becomes difficult to believe that all of these kinship systems would in time change to Crow and Omaha types, respectively, under the influence of clan organization.

To my mind, the types of kinship systems associated with clan organization and its absence are too numerous to leave any degree of plausibility for Dr White's explanation of how the Crow and Omaha types of kinship systems came into existence. Kinship systems being in the basic pattern of social structure and clans being in the secondary pattern, it seems likely that kinship might more frequently mold clans than the reverse. However, the associations of kinship types and different forms of social organization are so heterogeneous that I should hesitate to advance even this as an hypothesis.

Even exogamy, the classic attribute of clandom, is but a derivative of the basic pattern of social organization. Not only does one refrain from marriage into his mother's clan in a matrilineal tribe but also normally[4] into his father's clan. Both prohibitions are nothing more than slight extensions of the prohibited degrees of clanless society. Their bilateral and essentially non-clan, original character is often neglected by authors because of interest in portraying in sharp relief the clan organization of the group described.

The search for one hundred percent correlations between kinship features and social organization or customs is apparently a chase of a will-o'-the-wisp, which to date has eluded our grasp and presumably never will be attained. Always there are exceptions which must be explained away by "additional factors." Even so simple a correlation as that between levirate and the equating of father's brother to father fails us.

May not the cause of the incomplete correlations lie in the fact that kinship systems are first of all linguistic phenomena, as Professor Kroeber long ago suggested, and only secondarily social phenomena? As such they belong to, and reflect primarily, the basic pattern of social structure, and as such they constitute an archaic and highly refractory nucleus, which yields un-

[4] Cross-cousin marriage would be an exception.

evenly only here and there to influences from the secondary pattern of social structure.

This criticism has the demerit of being destructive, and offering no precise substitute for that which it seeks to destroy. It is alike applicable to the specific and limited cause-effect plea advanced by Dr White and to the functional panacea for kinship problems offered by Professor A. R. Radcliffe-Brown, in the latter's statement that "*it can be shown that there is a very thorough functional correlation between the kinship terminology of any tribe and the social organization of that tribe as it exists at present.*"[5]

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[5] A. R. Radcliffe-Brown, *The Social Organization of Australian Tribes* (Oceania, vol. 1, 1931), p. 427. Italics mine.

INTERACTING FORCES IN THE MAORI FAMILY*

By BERNARD WILLARD AGINSKY
and TE RANGI HIROA (PETER H. BUCK)

THIS is a general presentation of the interactions of some institutionalizations and forces in the Maori culture of New Zealand. The interrelations between the individual, the family and the tribe will be gone into.

The Maori, according to their traditions, came to New Zealand in canoe-loads of people who settled along the coast. Although a large number of canoe-loads came within a comparatively short period of time, they came individually, and not as a fleet. Gradually the coast became settled and as new canoe-loads of people arrived, they travelled along the coast until they reached an uninhabited spot where they landed and made their home. The descendants of these groups grew in numbers, populated the islands and developed into tribes.[1]

Primo-geniture is well established as the method of passing wealth, honor, titles, and other prerogatives from generation to generation.

The Maori desire to have their first-born be male. The desire is especially acute in chiefly families. If the first-born is a male, he is considered an especially "big man" and the people rejoice because "a chief is born." If a daughter is born first, it is a case of "bad luck," but it does not affect the right of the first-born male to primo-geniture. He succeeds to his father's position in the normal course of events. But the sister is senior and all her descendants will, in each generation, be senior to her brother's descendants. The family and the people do not like this to happen. The man and his sons and daughters have to pay more deference to her and her sons and daughters than otherwise, because she is "senior." Thus a man would have to pay respect to a female when the desire was for the established pattern which

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* I wish to take this opportunity of expressing my gratitude and indebtedness to Prof. Franz Boas, Prof. R. M. MacIver, and Dr. Ethel G. Aginsky for their criticisms and suggestions concerning the manuscript.

[1] The Maori refer to themselves as having descended from a particular male individual who originally came to New Zealand in a particular canoe. On an average there are twenty-two generations of descendants of the original settlers, but since the first-born of a first-born had less years separating them than the last-born of a last-born, we find in some genealogies more than thirty generations.

For a full discussion of the settling of New Zealand see Peter H. Buck (Te Rangi Hiroa) *Vikings of the Sunrise* (New York: F. A. Stokes Co., 1938).

For an excellent discussion of the Maori family see R. Firth, *Primitive Economics of the New Zealand Maori*, pp. 96–110. For further references see the bibliography in Firth's book which is quite complete and includes a full listing of titles of E. Best's work on the Maori.

was the opposite. The same holds true for families not of chiefly blood.

Many of the migrations in Polynesia came about when a younger son of a chiefly family got together a number of people and started on an expedition to acquire honor and new land. The boat-load would travel to another island, where they settled and established their own community. This community in turn became overcrowded so that eventually a younger son of a chief would gather together a number of people and go off on an expedition as his ancestors had done. The canoe-load would usually be made up of the second- or third-born members of a cross-section of the families in the tribe, for they were the ones who, due to the institutionalizations in the society, could not hope to become dominant individuals during the natural course of events if they remained in their home territory.

The islands became densely populated and it became increasingly difficult to find uninhabited areas. The expanding population was forced to face the problem of resorting to never-ceasing war in order to obtain new territory and of factions coming about and causing internecine strife and friction. While there was new territory it was a simple matter for an independent, ambitious, strong and resourceful individual to start an expedition. It also became possible for an individual who was not the first-born male to gather about him, by means of his personality, the support of the tribe, and thus gradually accumulate prestige and honor, sometimes overriding the traditional custom of primo-geniture and coming into power.

This came about in the Maori culture due to the fact that the elder brother takes precedence over his siblings on the basis of precedence of birth which carried with it many prerogatives. There are times when a particularly brilliant younger male is placed in the position of the "first-born" by the father due to his superior abilities. This depends upon the first-born not being at all outstanding, in fact, being of decidedly inferior quality. Although this occurs, it is not the pattern for the younger males of a fraternity to try to compete for the position. In the vast majority of cases, the eldest male is recognized as being the male who will succeed and does succeed to the father's position.

Since all the members of a tribe trace their descent from a common ancestor, they are related in varying degrees, and every member of a genealogical generation is recognized as a sibling. In times of peace, when no important antagonisms have broken through the surface, some senior individual of a junior lineage may try to bring as many individuals as he can under his personal power. In this way, a large following can be built up and in case of open hostility with the dominant lineage in power in the tribe or family, as the case may be, this man will have a greater number of relatives

to back him. Thus a man of less important birth is able to gain a great deal of power and force another of higher birth to give ground.

In this way, many questions were resolved by the power of the disputants rather than on a question of right and wrong. A strong wise man could build up a following and on that basis win a case against a man who was in the right on the question of custom and tradition. This, as well as many other things such as "accident," has raised a junior person to the power, control, and prestige of the senior line both in the tribe and family.

At any given moment the Maori society would show the dominant senior line as the powerful controlling political factor. It was made up of a group of individuals who adhered to a lineage. At the same time a junior lineage group, perhaps a group descended from a first-born male of a second-born male, would be a threat upon the power of that senior lineage group.[2] The individuals in the society would be stationary and the lines of affiliation could be drawn. It would be possible to tabulate the strength of each lineage group. Since every one in the society was related, it would be possible to chart the ideological respective strengths of the lineage groups. The actual power of the respective lineage groups would depend upon the emotional affiliations at that moment. Thus at least two diagrams would be necessary to portray the relative powers of the lineage groups: (1) on the basis of the past genealogical (the distant past marriages) and (2) on the basis of the immediate genealogical (the recent past marriages).

By superimposing one diagram upon the other, it would be possible to chart the varying affiliations of the individuals in the community and thus show how individuals and groups changed their support from one to the other. From this it would be possible, at the same time, to explain, on the basis of the happenings in the society, why individuals or groups changed their affiliations and affections from one leader to another. It may have come about due to the leader of the senior group's having made a stupid decision, declared war unjustifiably, taken liberties with the people, etc. Thus the swing would be away from the senior lineage group to the dominant junior lineage group of the senior lineage group, where a wise strong man had objected to certain acts and had counselled wisely.

The constant threat of the coming to power of the junior line was at all times a check upon the dominant senior line, forcing it to adhere more closely to the will of the people. It made the senior line take heed of the junior lineage groups and include their reactions and councils in any proposed

[2] Such junior lineages often became a sub-tribe, and a junior sub-tribe might rise to greater political power within the tribe but it could never rob the senior sub-tribe of its prestige derived from birth.

plans.[3] Although this threat was real and sometimes resulted in the junior lineage group becoming the power in the community, it was more of a threat than a reality because the people wanted the senior lineage group to be in power. That was the pattern, the traditional way of doing things. Something of real importance had to occur before the swing of support away from the senior line to the junior line would come about.

This constant threat of the junior line upon the senior line was a stabilizing force in the culture. It did not allow the chief to do as he pleased without thought of consequences. He had to "tread easily" and be careful of his actions and policies. He was forced to maintain his control and increase his followers by diplomatic speech and action. The people—public opinion—had to be taken into consideration in almost all matters of policy.

Due to the conflict between the distant past marriages and the recent past marriages, many disruptive forces were at work which brought about conditions of "favorable" and "unfavorable" marriages which led eventually to reformations in the dominant lineages and thus in the culture.

In the early days of the settlement of New Zealand, while the families were numerous and there had been no intermarriages within related groups, the genealogical method of establishing one's birth was a relatively simple matter. But when intermarriages within a family came about between related individuals, it brought about a condition where people found themselves related in various degrees. It follows from this that a chief could have fewer relatives to draw upon than a "present" senior of a junior line, because of the inbreeding which went on in chiefly families.

If one of the two persons getting married was a generation above the other, it had no bearing upon the marriage. That was considered proper.

In the case of members of the chiefly lines marrying, they could, and often did marry their "first cousins," because "they did not want the chiefly stock too widely spread." This was one of the checks against too many aspirants for power and leadership in the community.[4]

The close inbreeding which was so successful in Hawaii,[5] when practiced

[3] The procedure in tribal policy was for the dominant man to voice his opinion upon some matter of public policy or action. All of the important men talked it over, as did the populace. They in turn voiced their opinion and registered their objection by means of "the weight of public opinion." The minority group, after voicing their opinions, joined in with the majority so there was unanimous action. If a dispute or disagreement arose and continued, the minority group went off and started a new settlement.

[4] Cousin marriage was recommended due to the fact that in the event of domestic squabbles, the trouble was within the family. Disparaging remarks or striking a wife of high rank from another tribe often led to intertribal warfare.

[5] Blood brother-sister marriages. During my stay in Hawaii I had the opportunity of working with Mrs. Webb and Mrs. Pukui. Both of these women are Hawaiians. I found that the

by the Maori to a lesser degree, brought about a greater number of claimants to power. Inbreeding results in a family with fewer members. With the Maori the junior lines, due to less inbreeding, had a greater number of relatives to draw from for support. It may have been for this reason that the Maori chiefly families finally selected another family with a large number of individuals and much power to become allied with by means of marriage, rather than having their members marry "cousins."[6]

The most important distinction which was made between all individuals was whether they were *junior* or *senior* to each other. This was determined by tracing their lineage back to the time when they both had the same male ancestor. The children of this ancestor became the real point at which the distinction began. If "my" ancestor was a younger brother or sister of "your" ancestor, then "I" would be of the *junior* lineage and "you" would be of the *senior* lineage. The male lineages were the important ones in the society, but at the same time the female lineages had to be reckoned with.

The importance of the senior and junior lines and of the degree of relationship played a large part in the Maori social and political life. For example, if one tribe was visiting another, the old man who was the specialist on genealogies, and incidentally was an honored man for this accomplishment, would recite the genealogies. He would start at the very beginning when the first boat-load landed at that spot, over twenty generations before, and finally come to the split where two brothers became separated by having gone on different expeditions, or something of that nature. These two tribes are now the descendants of the two brothers. They are relatives and all of the members of the two tribes know their relationships to one another.

The senior group, by establishing itself as such, is then in the position to command respect and a certain amount of deference from the junior group. But this was really a ceremonial usage of the genealogy and while the two groups were together it had its place. It was also of considerable aid in avoiding war. For example, there are cases where an expedition seeking new conquests came near a fort and proposed to conquer it. The chief of the

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Hawaiian setup parallels the Maori on almost every point. The custom of "two callings" was not established to the extent that they used the term *karanga rua*, (*cf.* p. 201) but instead they used two kinship terms in referring to their relatives where there had been inter-marriages within the family on the basis of genealogy. Thus Mrs. Pukui calls a relative "brother-son." There are many cases of this. The mixup between genealogy and marriage occurs fairly frequently. In the genealogy you would use one term, but in the family you usually used the term which was based upon the marriage of your father to your mother. The latter was the one which was dominant in the culture.

[6] In Hawaii the inbreeding finally brought about a condition where the line of chiefs was so inbred that the ruler became an "untouchable."

fort, standing on a high palisade would call down, "Who is the leader of the war party?" The leader would stand forth and give his name. If the chief recognized the name and wished to avoid war, he would recite his genealogy and a relationship being established, the expedition would depart without attacking.[7]

When a marriage between two groups, or of a chiefly man in a group came about, or the death of an important individual, other groups visited them. Then the recounting of genealogies began and relationships would be established. Thus they would know whether to treat a man with respect or whether to expect a man to treat them with respect, as well as the individual treatments due to brother-sister relationship and so on.

When two tribes came together they started their recounting of the genealogies from the original settler and came down perhaps five, ten or fifteen generations when a split occurred and a younger male left the main group to settle somewhere else. At this point the old man would say "and so and so, the younger, went away. I leave him to you." Then he would go on showing how his line, and particularly he, was the direct descendant of the original settler. In this way he would establish his seniority and prestige. The other group would thus be placed in the position of being the junior lineage and therefore of less importance and prestige.

A member of the visiting group would recognize the genealogy and pick up where the old man had "given him his ancestor." He would contine the line down and show that he and his people were the relatives of the other group in the junior lineage and therefore of less importance and prestige in that locality. In his own locality, the visitor might have prestige by right of conquest or from intermarriage.

A member of the visiting group would recognize the genealogy and pick up where the old man had "given him his ancestor." He would continue the line down and show that he and his people were the relatives of the other group. In this way he, at the same time, acknowledges that his tribe is the junior group in that particular lineage and in that district.

The genealogical status, which is of course the biological tree, excluding the branches for the most part, was established and memorized. This was of the utmost importance in the tribe, especially for the chiefs. This was a mark of rank, prestige and honor. But at the same time, quite often, there were two males in each generation of a family. After some generations had passed there would be many lineages and since marriage occurred continuously and siblings had many generations separating them, a condition would arise where the genealogies were all mixed up. But since only a few

[7] R. Firth, *op. cit.*, 101.

chiefs, that is, only a few lineages, were important, it did not matter very much.

Another thing which made it possible for a junior to gain ascendance over a senior was *karanga rua*. This is a case of "double marriage" where two brothers marry two sisters, each marriage being a separate union. The same thing occurs when two sisters marry two men who are not brothers, or when two brothers marry two women who are not sisters. Where the younger brother marries a woman who is senior to his brother's wife, his descendants have two ways of "calling their relatives." They are junior on the part of their father, but senior on the part of their mother.

Although they can be real brothers and sisters in this double marriage, they can be brothers and sisters on the basis of tracing their ancestry to a common progenitor; and thus they are siblings and the principle of *karanga rua* (two callings) comes into real importance.

If a person is called *karanga rua* it refers to seniority. It means a person is both junior and senior in two important lines (genealogies).

A person may select one individual in the genealogy and trace his ancestry to show how he is a "two callings" with some particular person. He will do this to show respect to the other man, by using the term for elder. To welcome an individual in this way and show that you are junior to him (although you may also be "senior" to him) is to do him honor. If the relative is a much older man you do this as a mark of respect.

The first-born, being of the highest rank and power, caused the people to want a male to be the first-born. The Maori are patrilocal and patrilineal and if a female was the first-born, in the vast majority of cases she took that prestige to her husband's tribe when she married. She automatically passed it on to his children. In this way, the female was taking away from the tribe what rightfully belonged to them and was giving it to another tribe which was a potential enemy.

Thus the children of a female became the members of another group. In many cases hard feelings, antagonisms and even war sprang up between these two groups. Then these children, the male children of your own females, became enemies in policy and often times in fact.

With the gradual changing of the political conditions, the genealogical method of establishing familial relationships became outmoded. The chiefly families who continued themselves by means of genealogy finally found that they had started something which caused more trouble than it was worth.

Part of the education of the young people was concerned not only with training them in their genealogy, but in telling them incidents about other tribes so that they could defend themselves by word of mouth whenever nec-

essary. Such things as great battles where their ancestors did great things, or where the tribe did something for another tribe, were memorized.

An old woman used to visit Te Rangi Hiroa's mother occasionally and live with her. One time when Te Rangi Hiroa was visiting this woman at her own tribe the old woman said, "If anyone tells you disparaging things or makes uncomplimentary remarks concerning you, your tribe, or your ancestors, you reply and say, 'Who are you to talk to me? Did I not shroud your dead?'"

Sometime in the past an important chief had died, and as was the custom, Te Rangi Hiroa's ancestors visited the tribe and laid a large cloak and a green jade club at the foot of the corpse.[8] This placed the other tribe under obligations to Te Rangi Hiroa's tribe and any obligation or favor you are under to a Maori is a dangerous weapon and a threat. Sometime later a chief in Te Rangi Hiroa's tribe died and none of the *ngati-ruanui*[9] (the other tribe) came to the funeral. Someone of rank should have come and presented something, not necessarily of equal value, to the dead chief. Thus Te Rangi Hiroa's tribe had something on the *ngati-ruanui* in perpetuity. If some old man wanted to show off and said, "and who are you . . . ," you would answer, "How dare you talk to me who shrouded your dead?" He would be utterly ashamed and be put in his place. This was considered a very important thing to be able to do.

A man was honored for having a sharp tongue in matters of this kind. The prestige of the individual, group, and tribe was of vital importance and had to be defended by mouth. You had to have a reply or you lost "face." This went on a great deal and whenever a person had lost some prestige in a game or competition he was apt to bring something up and start a thing of this kind going to try to regain "face."

Although Maori society is patrilineal and patrilocal and everything follows that pattern, there are cases in the genealogies where a break occurs and a woman is counted as an ancestor in the continuous lineage. For example, the genealogy may come down ten generations and then a woman's name will be found. She will be the daughter of the tenth man and will constitute the eleventh generation. Her son will be the twelfth generation, and then the remainder will be men. The first man after the woman will be her son, then her son's son, and so on.

This has come about for various reasons. All the male issue of a man may be dead, gone on expeditions and never returned, and so on. In a case of

[8] The cloak is called *kopaki* "to wrap around." The cloak was not wrapped around the body, but it signified that.

[9] *Ruanui* was the woman from whom the people had descended. Cf. R. Firth, *op. cit.*, 97.

this kind the daughter will marry and stay at home, and her husband will come and live with her. The daughter will be the real chief and her son will become chief when he comes of age.

A celebrated chief from another tribe came into a tribe and married the daughter of a chief where there were no males left. The woman was very wealthy, and had a great deal of prestige in the community, and was honored by her people. The name of the tribe at that time was that of a man who was an ancestor. After some generations, the people who were the descendants of this woman took over her name for the tribe and it remained that way. In this case the prestige and honor of the tribe came equally from this woman and from her husband because they both were of important lineages. The tribal name is always taken from the dead and then only after a few generations. The person must be of importance in the first place, and must have a large percentage of the people descended from him. Thus in many cases the name of a Maori tribe really signifies "descended from."

If the first-born was a female, she had, by the fact of her birth, much power; and if, as usually happened due to her birth, she married a chief of note who was of a senior line, her descendants, being of two important senior lines, might get into power. This was another disruptive force, and there are cases where this occurred which changed the name of the tribe and brought a new dynasty into power.

As far as the family was concerned, such things as age difference in siblings, intermarriage between members of different generations, counting genealogies through the mother also, and the importance of "junior lines of a ranking senior line" brought about a condition in the family where members could be differentiated by more than one kinship term. There are cases, for example, where a man who is your "mother's brother" in the family is your "child" in the genealogy.

Thus the genealogy was the ideological picture and setup. This was based upon the marriages which had occurred in the distant past. The marriages of your close relatives brought into practice the actual conditions of kinship usage (in referring to your relatives) in the community. In times of recounting genealogies the genealogy was important, but it was mainly ceremonial. In determining relationships for an anticipatory marriage, either the genealogy or the actual family affiliations would be used depending upon whether or not a particular individual was for or against a particular marriage.

Thus, starting with these two conditions, the terms of relationship could be used in at least two different ways. You could call a man "nephew" on the basis of the genealogical record and call him "uncle" on the basis of

the marriage of your father and mother. But the direct patrilineal line always remained.

In determing their relationship two individuals traced their genealogies back to a common ancestor. If it was the father, the problem was resolved upon which person preceded the other in time of birth.

If two people are descended from two siblings the use of the term depends, not upon the respective ages of the two individuals of the same generation, who are trying to determine their relationship, but upon the relative ages of the two blood siblings through whom they trace their ancestry *to a common progenitor*. Thus the two individuals look upward in their respective genealogies until they arrive upon a common ancestor. Then they come down one generation, and the respective order of birth of the children of the common ancestor determines what they will call each other. The two individuals who are trying to determine their relationship may be of the same age, or they may be thirty years apart, yet that has no bearing upon the kinship terms they use.[10]

If, in tracing the ancestry and coming down to the two individuals who are trying to determine their relationships, they find that A is of the immediately preceding generation, that determines the relationship and thus the terms are used which denote "aunt-nephew," "aunt-niece," "uncle-nephew," or "uncle-niece," whichever the case may be. The same is true if the two individuals find they are the descendants of a common ancestor, and then if in tracing downward from their common ancestor in their genealogical tree they find that they are two generations apart, they call each other "grandparent" and "grandchild."[11]

Thus idealogically the kinship term usage is derived from the genealogy, that is, from marriage which took place in the past. It can easily be seen from this that the translation of the terms *tuakana* and *teina* into "elder brother" or "younger brother" is wrong, for that is true only when speaking

[10] In tracing their genealogies they do not begin with the first common ancestor, but start a few generations before that so that they can test to see if they are of the same original male lineage before the branching occurred. The sex of the siblings where the branching took place is immaterial. Cf. R. Firth, *op. cit.*, 100.

[11] In determining the relative status of two individuals their genealogies would be recounted. The twenty-two or thirty generations of Maori are calculated on the basis of the first-born male's first-born male's first-born male's male, and so on. In many cases there would be a difference of thirty years between the first-born and the last-born male of a fraternity. The males of the same fraternity, that is, two brothers, might marry into two different generations due to a difference of thirty years in the time of their births. In this way, after a few generations individuals of the same biological generation who call each other "brother" might be sixty years apart in age. Another thing which happened very frequently was to have a man of generation twenty marry a woman of generation fifteen or thirty.

of or to one's sibling of the same parent or parents. In all of the other cases it means "person in my generation who is descended from a sibling of my ancestor who was older (or younger) than my ancestor."

The relatives who live at a distance and who are not really known to an individual and yet come to a social function are treated according to the relationship which is established upon the basis of the genealogy. This is done as a matter of etiquette and "to make the person feel good," but as soon as that person leaves, the relationship is forgotten. The whole matter revolves around circumstances depending upon the political, social, or economic advantages offered in setting up the relationships.

In visiting another tribe a person would be treated better if he could set up a relationship with an important individual, for then he became a "brother," "father," etc., on the basis of this relationship to all the important members of the tribe and was treated with much ceremony and kindness.

The Maori very seldom use kinship terms in direct address. The proper names are used even when a child is talking to his parents or grandparents.

The relationship terms are used mainly in referring to relatives, in recounting a genealogy, in a sort of poetical usage, and in a set speech. For example, "Oh! My son . . . ," *e taku tama*. You never say *matua*, "father," but you do say *e taku matua*, "Oh! My father."

Where certain individuals are called by the same term, that is, equated terminologically, such as father, father's brother, and step-father, ego, although he uses the same term for these differently related individuals, knows that they are not all the same. He makes a distinction in his own mind and is conscious of that distinction. But on the other hand there are other individuals who also equate these men and to them they may all be the same. For example, "father" and "father's brother" to one person are "sons" to others (their parents) or "brothers" to their sisters. Thus the classing together of these individuals by a member of a lower generation is due to the individuals being classed together by a member of a previous generation, that is, by one's father or mother. The terminological equating of these individuals is carried on by a member of each lower generation, but in each case, the particular individual, the father who is the blood father is recognized as such although he and his brothers and parallel and cross cousins are all called by the same term. There may be five men in that group, and the remaining four are all classed together. From the standpoint of a child of another member of this group, they again are all classed together, although his own blood father is recognized as such.

The terminological identification of individuals, although being a re-

flection of family affiliations and order of birth, is closely tied up with the sociology of the people.

Brothers call each other by terms designating "born before me, takes precedence over me, comes before me, etc.," or the converse "born after me" etc.[12] The oldest male calls all the males in his fraternity by one term, and the youngest calls all the male members of his fraternity by another term. Thus, taken from the standpoint of every member of a fraternity speaking of every other member, they are all equated (as are their cousins, both cross and parallel). A child of any one of these individuals will follow his father's identifications and call all these men by one term, although he is cognizant of the paternity of his father.

Sororate and levirate marriages were practiced among the Maori. Exchange marriage (the marriage of a man and a woman, and at the same or a later time, the marriage of the woman's brother to the man's sister) was practiced also, but not as the usual thing. Neither was it unusual. Due to the fact that everyone in the community, and very often in other tribes, was related by means of previous marriages of their relatives, it very often happened that a man and a woman of different families married a sister and a brother of one family and later on, the man and woman found that they were related as brother and sister. In this way an "exchange marriage" was established, and this was reflected in the kinship terminology also.

Any degree of relationship might be found between a married couple due to the fact that relationship was traced so extensively, but such things as the marriage of a man to his wife's brother's daughter, of a woman to her husband's sister's son, cross-cousin marriage and other forms of marriage were not the institutionalized ways of being united. They definitely did not follow as the natural thing from a primary marriage, or from sororate and levirate.

Starting from sororate and levirate marriages we find that a man could equate his wife and wife's sister, since he could marry them both; brother's wife and brother's wife's sister, since his brother could marry both women; wife's brother's wife, brother's wife's brother's wife, and wife's sister's husband's sister, since they could be the same individual; his brother, wife's sister's husband, wife's brother's wife's brother, and brother's wife's brother's wife's brother, since they could all be the same individual; and his wife's brother, and sister's husband, since they could be the same individual. A woman could equate in the same manner. In this way the general term, brother-in-law or sister-in-law could develop. The child of the mar-

[12] The terminology does not reflect the same conditions for the females of a fraternity. Men do not distinguish them in like manner. They are all called by one term.

riage follows his parent's identifications and equates all his parents' male siblings and uses one term, and equates all his parents' female siblings and uses another term. Thus he equates his father's sister's husband and mother's brother because his mother equated them; his mother's sister and father's brother's wife; his mother's brother's wife and father's sister; and so on.

Thus the Maori kinship system could have been the result of marriage.

One would expect the genealogical stress to be reflected and to be of more importance since the Maori were so taken up with their genealogies, but in that case one would expect such things as the male line to be kept separate and distinct from the female line. One would also expect the distinction to be made between father's father's father's father and his brother, since one would be senior to the other. But these things do not occur. One would expect a mother's brother and a father's brother to be kept distinct since the mother's brother is of a different family and should not be quite as important as a father's brother who might become the stepfather with levirate marriage, and who is of the father's line. But none of these things seem to have had any effect upon the formation of the kinship system. They certainly are not reflected in the terminological identifications.

Furthermore, when a man of one generation (genealogical) marries a woman from a higher or lower generation (genealogical) the children do not use the terms for their mother's or father's siblings on the basis of the respective genealogies, but use the terms based upon the biological relationships brought about by means of their birth. That is, a man will use the term *matua* for his mother's brother and the same term for his father's brother. If he was following the genealogical setup of the tribe, he would call his mother's brother "grandfather" and his father's brother "grandchild." Again, when he married a genealogical "grandmother" he would call her "grandmother" and he would call her sister "grandmother," but instead he calls them "wife" and "wife's sister."

The taking over of the identifications from the parents follows the taking over of the identifications of both parents for the members of the parents' affinal families. That is, ego takes over his mother's identifications for his father's family and his father's identifications for his mother's family. *Or* he takes over the identifications of his parents for their own families.[12]

[12] See: B. W. Aginsky, *The Mechanics of Kinship* (American Anthropologist, Vol. 37, No. 3).

B. W. Aginsky, *Kinship Systems and the Forms of Marriage* (Memoirs of the American Anthropological Association, No. 45, 1935).

Thus his father calls his own sister by the same term that his mother calls her own sister, and the parents call their own brothers by the same term. In this way the child of a marriage takes over and equates his mother's brother and father's brother, and mother's sister's husband and father's sister's husband. He takes over and equates his mother's sister, father's sister, mother's brother's wife, father's brother's wife, and so on. The same principle holds for the next ascending generation where all the members of the grandparent generation are equated terminologically on the basis of sex.

The most important right in Maori society is the right of a family in its members. This is brought out very clearly in the attitude of the members of a family to the children born of a member. If that member dies the family will substitute another member to take the place of the deceased individual so that "the children will continue belonging to that family, so the children will not be brought up by an outsider, a stranger, and thus drift away from the family."

When the woman marries into another group, she very often takes with her a younger sister so that if she becomes ill, sterile, or dies, her sister will be with her to take her place. Her sister, having lived with her and the children, is familiar with the conditions and takes over the duties and privileges with little friction. The man, on the other hand, has a right in the female, for he has aided in her support and has already been married to her sister. Thus a satisfactory condition prevails where the family of the female perpetuates its right as does the family of the male, and the male is not bothered looking for another female to take care of him and his children. At the same time, if the man dies, his brother is put forth to take his place. The Maori phrase this also as "keeping the children in the family, because if a stranger became the parent of the children, the children would drift away from the family and be treated badly."

In the taking over of the children we have a condition of inheritance of them or the perpetuation of the family, the continuity of the family, by means of its fundamental property. In the inheritance of the children, we find the inheritance of a spouse, and always the house, cooking utensils, and frequently territory and other property. This all is essential for the continuing of the family life. Without these things the family could not exist. First it is the spouse, perhaps due to the right in the children, then the children, then the other things which go along to continue that most important complex in human society, the family. The family as such is the core of the culture. It is the means whereby the continuum exists and is carried on. The whole complex of inheritance can be phrased as the rights in

perpetuity of a family to itself. The members make up what can be called a closed corporation which cannot be entered except by the natural means of birth and by ceremonial birth. This right is recognized to the point that every member has some rights to his mother's family.

There can be no question that a genealogy is brought into existence by marriage with resulting children (sexual mating), and continues its existence in succeeding generations by means of the same process, sexual mating. As long as no members of a family tree marry one another, a genealogical table can be set up which is a biological history of a family. The reconstruction of that family can be as exact as if done by mathematics. But as soon as two individuals who are even remotely related have a child, the genealogical setup has a cross-current, a sociological influence, brought to bear upon it, which makes it difficult to represent from the standpoint of the children of that union and from the original inception of that family tree.

The Maori have evaded that possibility to some extent by tracing their main genealogy through the first-born males only. Thus, theoretically, there is only one line in each family which is counted, first-born males of the first-born males. This is the sociological tree of the Maori, not the biological tree. The biological tree would be represented by a triangle with the man at the apex and extended to his descendants, and by an inverted triangle viewed by a man looking at his ancestors. There would be no genealogical line, except when a relationship was established between two individuals of different generations. The line would exclude from consideration all the other individuals in the biological tree. But every time a relationship was established between two individuals of different generations, a new line would be drawn for the sake of convenience. Thus if your great-grandmother through your father (father's mother's mother) had been married to your great-grandfather through your mother (mother's mother's father), your biological tree would have fewer branches than the perfect biological tree and fewer lines could be drawn.

Again, if only males through males were counted, there would be no difficulty, since your mother's ancestors would be uncounted. But, although the Maori do not count their female ancestors idealogically, in actual practice they do count them.[14] Again, relatives are always marrying one another. This all results in a seeming chaotic state of Maori culture from the standpoint of genealogy and family affiliations. Almost every time a marriage occurs, a new alignment of relatives comes about, because almost

[14] In fact, they are sometimes counted to a degree where a female is found in a long line of males, and there are cases where the tribe bears the name of a female. Furthermore, there are lines which have descended from a female and constitute an important force in the tribe.

every Maori is related to almost every other Maori. Thus the genealogical setup which has been brought about by past marriages within the family and has created and continued the family in society, is remodeled and changed by the ever occurring present marriages. It follows from this, logically, that individuals will often be found who are related to each other in more than one way.

The preceding shows clearly that the Maori were interested in marriage rather than in genealogy *per se*. Marriage in itself cannot be divorced from genealogy, while genealogy cannot exist without sexual mating. But marriage, whether it was past or present, was the causative factor in the kinship system. Genealogy was a method whereby one could establish his rank or importance in the tribe. The kinship terminology was a means of establishing the familial relationships.

At the time of the settling of New Zealand and for some generations afterwards, the Maori had a system whereby they could maintain their status. But by the time the "White contact" came about the Maori had relegated their genealogical method to a ceremonial usage, something to fall back upon when needed. Intermarriage had occurred to a great extent. Eldest sons were not always the most suited for "Chiefship." Individual initiative was considered in the highest bracket. Women had been "Chiefs" and had been included in genealogies. Finally *the genealogy* became a means of establishing one's own genealogy in a number of ways. And the particular genealogy which gave him the greatest glory was selected by the individual from the number of possible genealogies.

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ARCHAEOLOGICAL RESEARCHES IN THE U.S.S.R., 1938–1939

By HENRY FIELD *and* EUGENE PROSTOV

INTRODUCTION

THIS report supplements five previous articles on archaeological research in the Soviet Union, three by the writers[1] and one each by E. Golomshtok[2] and A. Zolotarev,[3] which have appeared in the AMERICAN ANTHROPOLOGIST. In addition to our articles in this journal we have published elsewhere[4] results of various expeditions in the U.S.S.R.

The greater part of the information contained in this paper has been selected from reports read at the plenary meeting of IIMK in April and May, 1939, in memory of Academician Nicholas Marr, and later published.[5]

The material treated here is arranged under the following geographic headings: Abkhazia, North Caucasus and Daghestan, Crimea and Black Sea Region, Ukraine, European Russia, Central Asia (Uzbekistan, Kazakhstan, and Kirghizia), and the Ural and Altai area.

It should be mentioned here that some parts of the reports we receive from the U.S.S.R. often overlap material which we have already published. The reports are written, however, by different investigators, and usually contain new, sometimes conflicting, data. It has therefore been our policy to publish whatever descriptions of work we receive, cutting only the clearly repetitious matter. As all our reports carry regional headings, it is a simple matter for the reader to compare the various versions of an investigation.

Soviet literature in the library of Field Museum of Natural History was

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[1] Henry Field and Eugene Prostov, *Recent Archaeological Investigations in the Soviet Union* (Vol. 38, 1936), pp. 260–290; *Archaeology in the Soviet Union* (Vol. 39, 1937), pp. 457–490; *Archaeology in the U.S.S.R.* (Vol. 40, 1938), pp. 653–679.

[2] E. Golomshtok, *Anthropological Activities in Soviet Russia* (Vol. 35, 1933), pp. 301–327.

[3] A. Zolotarev, *The Ancient Culture of North Asia* (Vol. 40, 1938), pp. 13–23.

[4] (a) American Journal of Archaeology (Vol. 41, 1937), pp. 618–620; (Vol. 42, 1938), pp. 146–147, 295–298; (Vol. 43, 1939), pp. 331–332, 507. (b) American Journal of Semitic Languages and Literatures (Vol. 52, 1936), pp. 138–141; (Vol. 53, 1937), pp. 123–124; (Vol. 55, 1938), pp. 109–112, 333–336; (Vol. 56, 1939), pp. 322–324, 438–440. (c) Antiquity (1938), pp. 341–345; (1939), pp. 99–101. (d) Ars Islamica (Vol. 5, Pt. 2, 1938), pp. 233–271; (Vol. 6, Pt. 1, 1940).

See also A. M. Tallgren and others in Eurasia Septentrionalis Antiqua (ESA) since 1926, and bibliographical references in the footnotes to our three articles in the AMERICAN ANTHROPOLOGIST.

[5] *Kratkie soobshcheniîa o dokladakh i polevykh issledovaniîakh Instituta Istorii Material'noĭ Kul'tury* (Brief Communications on Reports and Field Investigations of the Institute for the History of Material Culture (IIMK) No. 1, Leningrad, 1939), pp. 1–36. This paper was received from VOKS at Field Museum of Natural History early in September, 1939.

examined by Eugene Prostov, who selected and translated passages for inclusion and supervised the transliterations[6] and the spellings of place names. Morelza Morrow assisted with the editing of the report.

The following abbreviations have been used:

AbNIIK	Abkhazskiĭ Nauchnyĭ Institut Istorii i Kul'tury (Institute of Abhazian Culture of the Georgian Branch of the U.S.S.R. Academy of Sciences)
ANU	Akademiĭa Nauk Ukrainskoĭ R.S.S.R. (Ukrainian Academy of Sciences, Kiev, formerly VUAN and UAN)
GAIMK	Gosudarstvennaĭa Akademiĭa Istorii Material'noĭ Kul'tury (State Academy for the History of Material Culture, Leningrad, now IIMK)
IAE	Institut Anthropologii i Etnografii (Institute of Anthropology and Ethnography of the State Academy of Sciences, Leningrad)
IIMK	Institut Istorii Material'noĭ Kul'tury, Akademiĭa Nauk (Historical Institute of Material Culture of the U.S.S.R. Academy of Sciences, Leningrad. Since summer of 1937, formerly GAIMK)
INQUA	International Association for the Study of the Quaternary Period in Europe
UZKOMSTARIS	Uzbekistanskiĭ Komitet po Okhrane Pamiatnikov Stariny i Iskusstva (Uzbekistan Committee for the Preservation of Monuments of Antiquity and Art), currently known as Uzbekistanskiĭ Komitet po Okhrane i Izucheniiu Pamiatnikov Material'noĭ Kul'tury (Uzbekistan Committee for the Preservation and Study of Monuments of Material Culture, Tashkent)
VOKS	Vsesoiuznoe Obshchestvo Kul'turnykh Snosheniĭ (All-Union Society for Cultural Relations with Foreign Countries, Moscow)

According to N. N. Gurina and L. ÎA. Krizhevskaĭa[7] field investigations carried on during 1938 by IIMK and continued in the early part of 1939 were of three types:

(a) Stationary expeditions, usually at large sites where work was a continuation of previous research, such as the Kostenki, North Caucasus, Bosporus, Abkhazian, Crimean, and Central Asian Expeditions.

[6] The Congressional Library System of transliteration has been used, with minor modifications, for all proper nouns in Russian.

[7] N. N. Gurina and L. ÎA Krizhevskaĭa, *Obzor polevykh arkheologicheskikh issledovaniĭ IIMK Akademii Nauk SSSR.*, 1938 (Survey of archeological investigations of IIMK, Academy of Sciences of the U.S.S.R. in 1938) from *Kratkie soobshcheniia o dokladakh i polevykh issledovaniiakh IIMK* (Vol. 1, Leningrad, 1939), pp. 11–36.

(b) Archaeological surveys of relatively unexplored areas, such as Uzbekistan, the southern Urals, the basin of the Chusovaia River, the Azov region, the construction area of the Kuĭbyshev [formerly Samara] hydroelectric station, and the northwestern part of the U.S.S.R.

(c) Work in co-operation with provincial museums, aimed at the collection of materials for expositions and the training of museum staffs.

Close connection was maintained with local museums. The following organizations co-operated with IIMK: the Institute of Archaeology of ANU; the Kazakhstan branch of the Academy of Sciences of the U.S.S.R.; the Kirghiz Scientific Committee of the Council of People's Commissars; UZKOMSTARIS; the Checheno-Ingush Scientific Research Institute; the Regional Museum of Cheliabinsk; the Sevastopol Museum Federation; and many other provincial and regional museums.

ABKHAZIA

1. The Abkhazian Expedition (S. N. Zamiatnin, leader) sent out by IIMK in 1938 continued excavations in Akhshtyr cave on the Mzymta River [Adler *raion*, Krasnodar province]. Five strata were identified. The two lowest were Mousterian, the middle was Upper Paleolithic, the fourth was Neolithic, and the fifth contained metal.

An area of forty square meters at the outer edge of the cave was excavated, and two trenches (20 by 32 meters) were extended toward the interior of the cave. On the scree slopes the finds were different from those inside the cave. Near the entrance were grouped hearths surrounded by many stone implements, broken bones, and pieces of charred bone. Isolated flints were scattered in the trenches. A Mousterian *coup-de-poing* found in the lowest stratum established the chronological relationship between the Akhshtyr cave and other Mousterian sites in the Caucasus. Isolated Neolithic objects occurred near the cave, and a Neolithic station with slate hoes and polished axes was also discovered.

NORTH CAUCASUS AND DAGHESTAN

1. The First North Caucasus Expedition (M. I. Artamonov, leader; A. P. Kruglov, A. V. Machinskiĭ, and G. V. Podgaetskiĭ, in charge of sections) was organized by the Checheno-Ingush Research Institute of History and Languages [at Groznyĭ] in co-operation with IIMK.

The most ancient monuments discovered by the expedition belonged to the pre-Scythian period (eighth century B.C.). A burial ground from the same period was excavated at the Chechen village of Korochoĭ, on the Khulkhulau River. Over a period of two years about 1000 square meters of ground were excavated and fifty burials in stone boxes and log chambers,

sometimes surrounded by cromlechs, were unearthed. Some of the skeletons were laterally flexed. Grave furniture included pottery and ornaments of bronze, antimony, cornelian, and paste. A cemetery of the same type was discovered at Gagatl', in Daghestan, and at Dargo, in Chechenia. These burials showed some relation with the Koban culture in the western part of the North Caucasus but represented a distinctive local variant. Certain objects also indicated a connection with eastern Transcaucasia.

A cemetery at Isti-Su in the Gudermess region was attributed to the Scythian period (sixth to fourth century B.C.). Burials yielded flexed skeletons, pottery vessels, bronze ornaments (*Figs.* 1 and 2), iron spearheads, and bone arrowheads. Among important objects were lunate fibulae, a bracelet with animal heads at each end, spiral bracelets, and rings. From these finds the excavators inferred a close connection between the mountainous regions and the steppes to the north of the mountains during the Scythian period. Settlements of the same period were found in the piedmont area of Chechenia and in the valley of the Sunzha River.

In an ancient sanctuary on the summit of Berak Mountain, near Archo in Daghestan, iron tridents, an iron arrowhead, and a bronze effigy of a man in a helmet (*Fig.* 3), were excavated.

A chain of *gorodishche's* (fortified settlements) belonging to the first centuries of the Christian era stretched along the Sunzha River. One of these, at Sernovodsk, was particularly well-preserved. Settlements and cemeteries of this period were also found in the Chechenian foothills. In both these localities many medieval monuments occurred.

The *gorodishche* at Alkhan-Ḳal'a, once an important center in the eastern North Caucasus, was excavated. Several levels of mud-brick buildings were uncovered. Grains of millet were found on the floor of one of the buildings, and some grains of wheat, in a storage pit. Nearby four huge tumuli were excavated, each enclosing a large chamber dug in virgin clay. The inventory, including gold ornaments, bronze arbalest (cross-bow-shaped) fibulae, and Egyptian paste objects, dated the burials at the second or third century A.D. Pottery indicated contemporaneity with the *gorodishche*.

2. The Second North Caucasus Expedition (E. I. Krupnov, leader), organized by the State Historical Museum in Moscow in co-operation with IIMK, excavated in Ossetia and Checheno-Ingushetia. In the former, ancient cemeteries at Upper Rutkha, Lizgor, Donifars, and Kumbulta were investigated, and in the latter, a settlement near Alkhasta and Scythian burials at Nestorovskoe, a Cossack settlement on the Assa River. At Alkhasta a catacomb burial of the fourth or fifth century A.D. yielded materials ranging from the Bronze Age to the Scythian period.

FIGS. 1–3, Bronzes from North Caucasus; 4, glazed cup from Crimea; 5–6, figurines from Uzbek S.S.R.; and 7, bas-relief of dancer from Nymphaeum, Crimea. Redrawn by Laura Brey.

CRIMEA AND BLACK SEA REGION

1. The Azov-Black Sea Expedition (O. N. Bader, leader) was organized by the Archaeological Institute of ANU, the Melitopol Museum for Local Studies, the Central Anti-religious Museum in Moscow, and the Anthropological Institute of Moscow State University, in co-operation with IIMK. The main work was at Kamennaia Mogila ("Stone barrow"), in the Melitopol region, where the oldest rock pictures known in the U.S.S.R. were discovered in 1936. Kamennaia Mogila is a large sandy hill located on the bottom lands of the Molochnaia River, between the Terpen'e and Tambovka rivers.

Drawings of animals, in bright red and raspberry red ocher, decorated the ceilings of the standstone grottoes inside the hill. On the basis of technique the pictures were attributed to four chronological periods: (a) Upper Paleolithic down to Azilian-Tardenoisian; (b) Mesolithic or Lower Neolithic; (c) Late Neolithic; and (d) Bronze Age.

The animals were often greatly stylized. Those of the Paleolithic period and the Bronze Age were characterized by relative realism. The oldest group included many bisons, deer, horses, and some predatory animals. Of particular interest was a mammoth. The latest period was represented entirely by horses. One of the pictures showed a horseman.

The drawings of the earliest group were compared with the Upper Paleolithic and Epipaleolithic rock paintings of Spain, Italy, and particularly North Africa and other Mediterranean regions.

Preliminary excavations were commenced at the foot of the hill. This site consisted of three horizons. The uppermost stratum belonged to the beginning of the Iron Age or to the Bronze Age; the middle, to the Mesolithic or the Neolithic period; and the lowest, to the Tardenoisian period.[8] In addition to flint implements of geometric forms, the lowest stratum yielded bone bars incised for the insertion of flints.

2. The First Crimean Expedition (O. N. Bader, leader) was organized by the Anthropological Institute of Moscow State University in co-operation with IIMK. Volchiĭ ("Wolf") Grotto, first excavated in 1879 by K. S. Merezhkovskiĭ and subsequently lost, was rediscovered. A rich Mousterian stratum was found. These excavations were continued in 1939.

3. The Second Crimean Expedition (S. N. Bibikov, leader), organized by IIMK, completed excavation of the site of Murzak-Koba. Four cultural

[8] This sequence does not appear to conform to that of stations in western Europe. An apparent inconsistency of this character may well be the result of our being unable to consult Bader on this point.

strata were discerned: (a) Medieval, (b) Tardenoisian phase, (c) Azilian phase, and (d) Upper Paleolithic.

Two new Upper Paleolithic sites were discovered in rock shelters nearby. A medieval (fourteenth century) fortification at Issar was also investigated.

4. The Bosporus Expedition (V. F. Gaĭdukevich, leader), organized by IIMK in co-operation with the A. S. Pushkin Archaeological Museum in Kerch, continued work in three sections of Myrmecium. In the northern part of the town the fortress wall, which had been built by the Spartacide dynasty during the fourth century B.C., was measured. Its present breadth was found to be 2.40 meters and its height 2.0 meters. Remains of Roman structures built upon its ruins were uncovered. Graves of the sixth or fifth century B.C. lay beneath the foundations of a square tower. Mortuary inventories included black-figured Attic lekythoi. Industrial buildings of the Roman period were discovered in the elevated part of the town. These included six fish-salting tanks (3.0 by 2.80 meters) filled with tiles from the fallen roof and stone slabs used to weight fish in the brine. At the bottom of a few of the tanks were found accumulations of small sardines (*khamsa*). These tanks had a capacity of about 100 tons of fish. During the late Roman period one of the tanks had been transformed into a dwelling, as indicated by the presence of a hearth. This was taken to demonstrate the degeneration of industry in the Bosporus region during the Roman period.

Hellenistic structures attributed to the third century B.C. were discovered in the central part of Myrmecium. The cultural stratum was four meters thick. Among objects found were a terra cotta figurine of a nursing mother and one of a comic actor. Hellenistic pottery and a stone wine press were also found.

Excavations in the southwestern part of Tiritaka revealed a well-preserved winery, with a pressing platform, storage tanks, and a stone weight from a press. Nearby were two Roman fish-salting establishments, one having four tanks, the other five. In some of the tanks were fishhooks, bone needles for knitting fish nets, and remains of herring. A kiln contained several dozen conical clay net-weights. The winery was attributed to the second or third century B.C.

A building dated at the second half of the sixth century B.C. was excavated in the western part of Tiritaka. Scattered on the mud floor of one of the apartments, near a hearth, were archaic terra cotta figurines of a seated goddess, bearing traces of color. A terra cotta mask was also found. In the same room were many specimens of local and imported pottery of the fifth or sixth century B.C. In the upper strata of the southern section of this site

were the remains of a Roman house and pottery of the sixth or seventh century A.D.

Preliminary excavations in the central area of Nymphaeum disclosed a pottery kiln of the Hellenistic period. In the cultural stratum below were terra cottas of the fifth or sixth century B.C. Of particular interest was a bas-relief of a dancer (*Fig.* 7) of the fifth century B.C.

In co-operation with the staff of the Taman Museum for Local Studies, the expedition excavated eighty-eight burials at Taman. Several of these, belonging to the fifth or sixth century B.C., contained interesting samples of imported Ionic and Attic pottery. The majority of the remaining burials were Medieval.

5. The Mangup Expedition (A. M. Ankudinov, M. A. Tikhanova, E. V. Veimarn [Weimarn], and A. L. ÎÀkobson, leaders), organized by the Sevastopol Federation of Museums in co-operation with IIMK, continued excavation of the Basilica. This structure was surrounded by a necropolis, which had been in use until the eighteenth century. One hundred and thirty-one burials were uncovered. In the upper strata the burials were in wooden coffins; in the lower, in stone sarcophagi. To the north of the basilica stood a baptistery, which had been converted into a cemetery. It had a mosaic floor.

Among the ruins of the basilica were architectural fragments from the sixth century A.D., partly of Proconnesian marble and partly of local limestone. These included a capital and a frieze, both decorated with carvings of denticulate acanthus leaves. Mosaic fragments, glazed and unglazed pottery, tiles, bricks, and several pointed amphorae were unearthed. These objects seemed to indicate that the basilica was first erected in the fifth or sixth century A.D. and that a large settlement existed at that time on the Mangup plateau.

Another site excavated was the palace of Prince Alexius (1427), which Prince Isaac rebuilt during the second half of the fifteenth century. The ground floor of the central hall and a storeroom containing nine pithoi were uncovered. Pottery included a quantity of red ware, mainly flat-handled pitchers ornamented with white clay solution, and glazed dishes, pale yellow and green, with incised geometric and floral ornament. Of particular interest were two inscribed and dated glazed cups, one of them bearing the name of Prince Isaac (*Fig.* 4). From this pottery it was thought possible to date similar ware from the Chersonesus and Eski-Kermen.

The expedition also studied the defensive walls of the Mangup plateau. Early Medieval walls (fifth to sixth century A.D.) were found, and a contemporaneous gate at Teshikli-Burun. Two vaults containing burials of a later period were examined.

At Belbek cemetery two inhumations, one male and one female, were associated with a pointed Roman amphora, fibulae, perforators, beads, and two small jugs, all attributed to the first or second century A.D.

6. The Phanagoreum Expedition (V. D. Blavatskiĭ, leader), organized by the State Museum of Pictorial Arts in co-operation with IIMK, excavated a late Hellenistic necropolis which was discovered in 1936. In the center of the necropolis mound the remains of an early Hellenistic building consisted of a floor, sections of walls, fragments of painted stucco, cornices, and a Doric capital. After this building had perished the surrounding area was used as a necropolis. Most of the burials were individual inhumations in the ground, not in the tumulus. Five were in "catacombs." Bronze objects, fragments of pottery, and glass vessels accompanied the skeletons. In the western part of the excavations was a pile of broken, pointed amphorae, and among them were fragments of terra cottas of the fifth century B.C., a red figured cylix, and sherds of black, lacquered ware. The necropolis lay outside the city limits of Phanagoreum.

UKRAINE

1. The Desna Expedition (M. V. Voevodskiĭ, leader) was organized by the Archaeological Institute of ANU and the State Anthropological Museum of the Moscow State University in co-operation with IIMK. Work was divided into five sections in the Novgorod-Seversk area.

The objectives of the expedition were: completion of the excavations at Chulatovo II and Pushkari I and VII; search for new Paleolithic sites; and geological dating of previously discovered sites.

An accumulation of flints, similar to that found in 1937, was discovered at Chulatovo II, indicating the presence of a workshop. Several small fire platforms filled with bone and charcoal and small pieces of red paint were also found. Two pit dwellings were excavated. One side of one of these pits (30 centimeters deep) was shored by vertically placed mammoth bones; the second pit had a fire platform at the bottom. The settlement indicated by these dwellings was thought to represent a temporary hunters' camp of the Upper Magdalenian period.

A new site, Chulatovo III, was discovered. On the basis of surface materials it was attributed to the Lower Mousterian period.

V. I. Gromov supervised the geological survey of the surrounding territory in order to reconstruct the topography.

Pushkari VII yielded a quantity of flint flakes, fragments, and a few implements, whose workmanship suggested a peculiar Epipaleolithic phase.

Two Bronze Age settlements, located on opposite banks of the Desna River, contained pottery and numerous stone implements.

Many early feudal *gorodishche*'s, several *selishche*'s (unfortified settlements), and cemeteries of the first millennium A.D. were discovered.

P. I. Boriskovskiĭ continued excavations at Pushkari I. The cultural stratum was virtually packed with flint artifacts. Forty thousand flints, including one thousand implements, were collected during 1938. Of particular interest was a series of large, symmetrical points of Proto-Solutrean type, including several *feuilles-de-laurier* (9 centimeters in length) and end scrapers. The implements were large and delicately retouched.

An accumulation of mammoth bones[9] included tusks belonging to at least forty animals and many teeth, almost entirely from the upper jaw. Practically all the mammoth bones were whole, but numerous split or cut bones of horse, wolf, and hare were excavated. The composition of these osteological remains testified to a preliminary selection of portions of animals.

These bones filled a pit, at the bottom of which two hearths were found. In the center of the hearths was a layer of ashes and small fragments of burned bones. The hearths also contained pieces of paint, charred flints, and various artifacts of mammoth ivory. At the bottom of the pit a series of small holes surrounding the hearths were filled with flints, bones, charcoal, mammoth ivory artifacts, points, laminae, and *polissoirs* made from large ribs. A human tooth belonging to a seven or eight year old child was also found in one of the holes. The pit with the hearths and storage holes, belonging to the Aurignacian period, was thought to be the foundation of a large collective dwelling.

2. The Tripolje Expedition (T. S. Passek, leader), which was organized by the Archaeological Institute of ANU in co-operation with IIMK, continued excavations at Kolomishchina, near Khalep'e. The main objectives were: completion of the excavation of two dwellings begun in 1937, excavation of two newly discovered dwellings, investigation of the unexplored area between the two groups of dwellings, and discovery of new Tripolje settlements.

In the newly discovered dwellings were remains of poles which had supported the roof. Several small habitations (in area 10–12 square meters) containing stoves, fragments of pottery, querns, and animal bones were identified in the area between the larger dwellings.

In one of the dwellings the upper portion of a stove was found. It was rounded and possessed the same general form as stoves in the ancient models of Tripolje dwellings. This discovery made possible for the first

[9] Cf. Karel Absolon's reports on Wistonice published by the Moravske Zemske Museum in Brünn (Brno).

time the determination of the method used in making the vault of the stove and the roof structure, which was apparently slanting on two sides.

Excavations over a wide area showed that the plan of the settlement at Kolomishchina consisted of two concentric circles, the inner circle being formed of the smaller dwellings. The gradual growth and expansion of the larger houses was indicated by successive stratification of the floor, presence of partitions and elevations, and varying dimensions.

No clay structures of any kind were discovered inside the inner circle. A large area probably served for housing cattle and may also have been used for festivals and religious ceremonies.

3. The Kiev Expedition (M. K. Karger, leader), organized by the Archaeological Institute of ANU, jointly with IIMK, continued work in the two oldest areas of Kiev—at Desiatinnaia Church (tenth century) and on the site of Mikhaĭlovskiĭ Monastery.

The entire southern half of Desiatinnaia Church was uncovered. The foundations and the lower part of the walls were in a good state of preservation. A burial antedating the building of the church was also discovered.

On the site of Mikhaĭlovskiĭ Monastery a series of lay dwellings of the twelfth or thirteenth century had been destroyed by fire, probably during the Tatar invasion. These dwellings (in area 12–16 square meters) were dugouts, with pisé stoves. Among the 10,000 objects found were many utensils, vessels, ornaments, and implements.

One of the huts, probably a workshop, contained tools and fourteen small pots of paint.

Up to 1938 the history of Kiev had not been traced back beyond the tenth century A.D. Several isolated finds, one tumulus with an incinerated burial, and several other inhumations were known as early as 1830, but the significance of these finds was misunderstood by the early archaeologists. In 1890 Khaĭnovskiĭ, an amateur archaeologist, supervised excavations on the Trubetskoĭ estate and established the presence of fifty burials, which he thought belonged to the ruins of Vladimir's palace. In 1907 excavations were conducted by Khvoĭko, who excavated on the Petrovskiĭ estate and found structures of the tenth to the twelfth century and a still earlier site. For some years following 1908 large scale excavations were made near Desiatinnaia Church by Mileev, under the sponsorship of the Imperial Archaeological Commission. Many data collected by Mileev remain unpublished; his journals, inventories, and reports have been lost. Under the church Mileev found several burials older than the church itself. He also excavated a moat which he thought was dug to protect the church. Recent excavations have shown that the moat surrounded a settlement be-

longing to the pre-Vladimir period, and that it was filled in order to build the church. Excavations carried on from 1936 to 1938 uncovered a number of burials near the ancient settlement. More than one hundred and fifty burials have been uncovered since the beginning of excavations at Kiev one hundred years ago. The territory of the necropolis of Kiev greatly exceeded the area of the oldest town.

Most of the burials were ordinary inhumations in wooden coffins, each grave surmounted by a small tumulus. Agricultural objects were characteristically absent. Female interments, usually richer than male, occasionally contained pearls, necklaces, and dirhems of the ninth and the early tenth century. Several very rich burials, one containing the remains of a horse and some the skeletons of female slaves, belonged to military leaders. Walls of log cabin type were occasionally built around the grave under the tumulus.

A separate necropolis of the ninth or tenth century, discovered in Kirillovskaĭa street, apparently belonged with another *gorodishche*. In 1926 a settlement of the eighth or ninth century, also independent of the Kiev site proper, was excavated at Kiselevka Mountain, nearby. It appeared that the three separate *gorodishche*'s had not been united until the tenth century.

A few investigators attributed burials at Kiev to the Norsemen, basing their conclusions on the discovery there of Norse fibulae and swords. While Karger admits the presence of these objects, he states the opinion that there is no reason to consider the burials Norse, since their basic inventories and their structure are not Norse. Closely related burials are known from Chernigov and connected *gorodishche*'s and throughout the area occupied by the Slavic tribes of Poliane and Severiane. Similar log house burials (of the first half of the first millennium A.D. or the end of the first millennium B.C.), found in the middle Dnieper area, connect the Kiev burials with those of the Scythian epoch.

Karger concludes that the site on which the large urban center of Kiev was founded in the tenth century A.D., the site of the modern city, was occupied in the first millennium B.C. and the first millennium A.D. by at least three settlements belonging to a local agricultural population.

4. The Nikopol (Nicopolis) Expedition (V. Grakov, leader), organized by the Nikopol Museum for Local Studies in co-operation with IIMK, excavated two tumuli near Nikopol and a Scythian *gorodishche* on the left bank of the Dnieper, near Kamenka. One of the tumuli contained three burials of the "Drevne-ĬÀmnaĭa" ("ancient burials in fosses") culture. The other contained a Scythian burial in a deep catacomb. This grave contained several square buckles decorated with ram's heads and the handle of an

iron dagger. An iron knife and an accumulation of bones of *Bos* and *Equus* were found at the head of the skeleton.

The Scythian *gorodishche* occupied an area of ten square kilometers between the Konka and the Dnieper rivers. An earthen rampart (1700 meters long) was discovered on the Kamenka side of the *gorodishche*. In the cultural stratum (30–35 centimeters thick) were found fragments of Hellenistic amphorae, sherds of black lacquered ware, many pieces of local Scythian pottery, portions of querns, casting funnels, typical Scythian trilateral arrowheads, iron knives, and clay and lead spindle whorls. The majority of the objects were found in the remains of several dwellings, each having an area of 150 square meters. Among osteological remains, bones of *Equus*, *Bos*, and *Ovis* predominated.

5. The Vorskla Expedition (P. N. Tret'i͡akov, leader), organized by the Archaeological Institute of ANU in co-operation with IIMK, investigated pre-Feudal monuments along the upper and middle courses of the Vorskla River. These old Slavic monuments occurred in compact groups, usually consisting of one or two *gorodishche*'s on the high banks of the river, several ancient *selishche*'s and a tumulus. Two such groups of monuments were studied near Petrovskoe in the Trostenetsk region of the Kharkov *Oblast'*, another near Akhtyrki, and another at Zhuravnoe in the Akhtyrki region of the Kharkov *Oblast'*. The *gorodishche* at Petrovskoe (4,000 square meters in area) stood on a high, narrow ledge above the bank of the Vorskla. Many fragments of handmade pottery, dated at the ninth or tenth century A.D., were uncovered by landslides on the river banks. This *gorodishche* was surrounded by a series of *selishche*'s. Nearby, to the west, stood a group of tumuli.

In the southern part of the *gorodishche* the remains of two dugout dwellings and several outhouses of the ninth or tenth century were discovered. These dwellings consisted of rectangular pits (3.80 by 3.40 meters and 3.90 by 3.80 meters and approximately one meter deep) dug in the loess. At the corners of the pits and under the walls were holes left by the poles which originally supported the wooden panelling of the walls and the roof. In the corner of each dwelling a depression had been dug for an oven. On the floors of the dwellings were fragments of handmade pottery, bone points, a spindle, a whetstone, part of a round millstone, and animal bones. A kind of cellar near one of the houses had the form of a rounded pit, narrow at the top and broad at the bottom, with a horizontal floor.

The outbuildings in the western part of the *gorodishche* consisted of four cellars and the remains of a surface storeroom. The cellars were round pits (1.10 to 1.70 meters deep) dug in virgin soil. In two of the cellars were frag-

ments of pottery, animal bones, fish scales, and eggshells. In the surface storeroom were five complete handmade vessels, thirty-eight astragals of roe deer, and four bone points.

The upper horizon of the cultural stratum of the *gorodishche* contained pottery, iron, and glass objects, which were attributed to the eleventh or twelfth century. One of the female skeletons was accompanied by a rich necklace of beads and silver and bronze medals; with another were two gold temple rings, a belt, rings, and a flint and steel for making fire.

EUROPEAN RUSSIA

1. The Kola-Karelian Expedition (B. F. Zemli͡akov, leader) was organized by the Soviet section of INQUA in co-operation with IIMK.

The primary objective was to make a preliminary study of the "Arctic Paleolithic" monuments on the Murmansk Peninsula and in the Karelian A.S.S.R. and to determine the relative antiquity of the Neolithic cemetery on Oleniĭ ("Deer") Island, in Lake Onega.

Zemli͡akov found a new "Arctic Paleolithic" site on the 40–42 meter terrace of Solovaraka Mountain, in Kola fjord near Kola. The stratigraphy was determined. Stone implements and human remains were excavated. Many sites attributed to this same period were identified along the lower course of the Tuloma River.

The earliest sites studied by the expedition were in the Karelian A.S.S.R. on the high (70–80 meter) terraces above the north shore of Lake Onega and in the Trans-Onega (Medvezh'i͡a Mountain) region. These sites, of which there were ten, were completely devoid of pottery. The inventories were closely related to those of the "Arctic Paleolithic" and greatly resembled the finds from Finnish Lapland and Finnmarken. On one of the lower terraces a site contained "pit-and-comb" pottery.

2. The Karelian Expedition (N. N. Gurin, leader), organized by the Karelian State Museum in co-operation with IIMK, also worked in the Medvezh'i͡a Mountain region. Five Neolithic sites were located. The inventories included excellent specimens of "pit-and-comb" pottery and quartz, flint, and amphibolite (*rogovik*) implements, including a pickaxe, spear points, and chisels. A large stone anchor was also found.

Excavations continued at the previously known site of Voĭ-Navolok, near Povenets, yielded a quantity of Lower Neolithic pottery. Beneath a dwelling of the dugout type, with a fire place, was an oval storage pit lined with stone. Objects found included net sinkers, fragments of a sandstone saw, spearheads, and arrowheads.

3. The Oleniĭ Ostrov Expedition (V. I. Ravdonikas, leader, and N. N.

Cherniagin, excavator) was organized by IIMK. Work at the southern part of Oleniĭ Island was a continuation of the excavation of a cemetery, begun during 1936–1937. Sixteen graves were opened. The peripheral burials contained poor inventories and little or no red ocher, which was plentiful in the more centrally located graves. Beaver tooth laminae and elk incisor pendants were found almost entirely in the central graves. Flint points, commonly found during the 1937 excavations, were not present. Among important objects was a horn baton, ornamented with a finely carved moose head. This object lay near the left hand of a skeleton.

One of the burials (No. 4) was distinct from the others in that the skeleton was flexed on the left side. This grave contained much red ocher but no inventory.

To the west of the cemetery, in a cultural stratum devoid of pottery, scrapers, laminae, and flakes of flint, quartz, and slate, hammer-stones and pressure flakes, and blanks for bifacial slate implements were found. A similar stratum was located to the east of the burial ground.

4. The Vologda Expedition (A. IA. Briusov, leader) was organized by the Moscow State Historical Museum in co-operation with IIMK. Excavations during 1938 were concentrated in the "Karavaikha" area on the right bank of the Eloma River, where a settlement and a cemetery (11 burials) yielding abundant materials had been found. Two types of burials[10] were represented: those with the head oriented westsouthwest, southwest, or west, each containing a small amount of ocher near the skull; and those with a southern orientation and an abundant covering of ocher. The latter type occurred partly outside the cultural stratum, at the edge of the site. The inventories included stone and a few bone implements, many flint flakes, a quantity of "pit-and-comb" sherds, and some animal bones, including *Alces* sp., *Cervus tarandus*, and *Castor* sp. Although the terminal date of occupation was attributed to the middle of the second millennium B.C., stratigraphy indicated that the site had been inhabited much earlier.

On the right bank of the Modlona River, at its confluence with the Pereshnaia River, were the remains of a pile dwelling, the lower portion of which was well-preserved. It was attributed to a period not later than the first half of the second millennium B.C. Associated with this structure were stone implements and pottery closely related in form and decoration to the Bronze Age pottery of the east and south. A flat, perforated amber button of eastern Baltic type and a symmetrical amber pendant were identical with objects found by N. Roerich at Konchanskoe.

On the left bank of the Modlona, near Pogostichshe, were the remains of

[10] Cf. burials at Ofnet and Paviland.

a settlement of the third millennium B.C. Among bone implements found there the horn haft of an axe was of particular interest.

5. The Staraĭa Ladoga Expedition (V. I. Ravdonikas, leader, and G. P. Grozdilov, excavator) was organized by Leningrad State University in co-operation with IIMK.

In 1938 the work, interrupted twenty-five years ago, was resumed. The site investigated was known to have been one of the earliest Russian settlements and to contain the richest known cultural stratum of the Russian Feudal period.

Two *izba*'s (wooden dwellings) with stone hearths and several outhouses (storerooms and barns) occupied the lowest cultural layer of the *gorodishche*, and were attributed to the ninth or tenth century A.D. In a higher level another *izba*, with a clay floor, was attributed to the thirteenth or fourteenth century. Beneath the latter were large, isolated stone slabs, thought to be the remains of a pavement which originally formed a square in front of St. Clement's church (built in 1153). An eleventh century Christian burial ground was also found in the *gorodishche*.

At Staraĭa Ladoga the excavators found a small hoard of Oriental coins of the first half of the eleventh century; bronze buckles; cornelian and lead seals; and glass, cornelian, rock crystal, and paste beads. Many everyday objects of clay and bone were also found. The sherds belonged to the various periods indicated. Pottery associated with the lowest (ninth to tenth century) stratum was almost entirely handmade.

A cemetery in the neighborhood contained incinerated inhumations associated with a few objects of the sixth to the eighth century. Similar burials in isolated barrows (both round and long) on both banks of the Volkhov River near Staraĭa Ladoga were apparently of a later date.

6. The Novgorod Expedition (A. V. Artsikhovskiĭ, leader) was organized by the Moscow State Historical Museum and Moscow University in co-operation with IIMK.

The excavated area known as Iaroslavovo Dvorishche ("Prince Yaroslav's compound") included eleventh to fifteenth century deposits superimposed by a modern stratum containing sixteenth to nineteenth century pottery and coins.

The fourteenth and fifteenth century stratum contained a pavement formed of broken jawbones of cattle, laid in the ground with the teeth on the surface. Below that lay wooden pavements of the eleventh to the thirteenth century. A street, in what may have been an ancient trading area, was bordered by lots separated by fences of large and small poles. These were thought to be the remains of stalls. Many fragments of leather footwear,

some embroidered, were found here. A leather swordsheath with embossed floral ornament and a commercial lead stamp with the image of a wild rose were also unearthed. In one section of a later stratum the remains of a solid wooden pavement were excavated, and many wooden objects, such as parts of a loom, pestles, spoons, and baskets, were found. In a contiguous stratum were many skeletons, part of them wrapped in birch bark; a few had been buried in hollowed logs. Beneath these burials were the remains of an ice cellar with two floors built of logs. On the basis of pottery types this structure was attributed to the twelfth century. Sewer pipes and water mains, found in contact with the cellar walls, were considered much older than the cellar. This would indicate that water works were used in Russia earlier than in many countries of western Europe. A piece of hauberk was found in this cellar.

7. The Pskov Expedition (N. N. Cherniagin, leader) was organized by the Pskov Museum in co-operation witn IIMK.

Excavations were concentrated at three sites, the primary objective in each case being the investigation of burials in tumuli.

The two earlier sites, at Gorodnia and Griadishcha, included several long barrows as well as the customary round barrows. Twelve tumuli were excavated. The burials were incinerated inhumations. In a few instances large fragments of human bones were mixed with charred animal and bird bones.

Associated with these burials were fragments of pottery, made of clay containing an admixture of coarse sand.

At Gorodnia two conical tumuli (2.5 meters high) were excavated. Conical tumuli are rare in the Novgorod district. Several groups of incinerated bones, buried at different layers inside the earthwork, were found in each tumulus. The majority of the inventory consisted of flatbottomed, cylindrical jars without necks. Among unusual objects was a bronze buckle, the rim of which was decorated with a stamped ornament.

At Adamov, the most recent site, seven tumuli containing incinerated inhumations of the eleventh or twelfth century were excavated.

8. The Yaroslav Expedition (IA. V. Stankevich, leader) was organized by the Yaroslav Museum in co-operation with IIMK.

Sixteen tumuli were excavated at Mikhallovskoe. Twelve of these contained incinerated burials. The inventory of these tumuli consisted of bronze ornaments and hasps; shell-shaped fibulae; belt buckles; iron arrowheads, knives, and weights; and clay bear paws. Several vessels were also found. The incinerated burials contained comparatively poor grave furniture and were oriented toward the west.

Four incinerated burials in tumuli attributed to the second half of the tenth century were excavated near Bol'shoe Timirevo.

9. The Vladimir Expedition (N. N. Voronin, leader) was organized by the Academy of Fine Arts in Leningrad in co-operation with the Vladimir Museum and IIMK. In the palace at Bogoli͡ubov a white stone pavement and a conduit were uncovered.

Excavations in the southern half of the palace cathedral disclosed, contrary to written records, that this structure was of the four columnar, not of the two columnar, type. It is the nearest prototype of the Uspenskiĭ Cathedral in Moscow. The masonry of the walls and the columns was of high craftsmanship. Fragments of frescoes were found in the diaconicon. The floor of the cathedral had been covered by sheets of yellow copper laid on a double mortar foundation. The seams between the sheets had been soldered with lead. The floor of the choir was paved with richly ornamented glazed tiles. Of particular interest was a tile with the figure of a brown cock with emerald colored eyes on a milky-ocher background.

Exploratory studies of the southern façade of the Spas [Saviour's] Church (1164) and the Church of the Ascension (twelfth century), at Bykovka settlement, were completed.

10. The Seliger Expedition (S. Tarakanova, leader), organized by the Moscow State Historical Museum in co-operation with IIMK, excavated the site of a fortified estate of the *boyar* family of Boretskiĭ. On the eastern shore of Lake Seliger was a breastwork of large boulders, clay, and sand, with horizontal and vertical supports made of wood. In the same stratum (No. 3) pieces of coal, animal bones, and coarse pottery were found.

11. The Upper Volga Expedition (P. N. Tret'iakov, leader) was organized by IIMK in co-operation with the Soviet Section of INQUA. The work begun in 1933 in the construction area of the Upper Volga hydro-electric stations was continued. The season of 1938 was devoted to study of the heights of the surrounding watershed—the shores of Lake Pleshcheev and of the Trubezh, Veksa, and Kubra rivers. A *gorodishche* on the slopes of Aleksandrova Mountain on the eastern shore of the lake was examined. Nearby was a group of burials in a tumulus (which had been missed by Count S. A. Uvarov, the first excavator in this area) and two settlements of the ninth or tenth century. A series of Neolithic stations was examined beside the Veksa River and near Lake Somino. Several sites yielding "reticulated" pottery were also discovered.

It was established that the sites on the watershed differed from those along the Volga. The former were *gorodishche*'s, the latter *selishche*'s, both belonging to the first millennium B.C. or to the first millennium A.D.

12. The Kuĭbyshev Expedition (A. P. Smirnov, leader) was organized by IIMK in co-operation with the Kuĭbyshev [formerly Samara] Regional Museum. The work of the expedition was concerned principally with the preservation of monuments within the construction area of the hydroelectric stations in the Samarskaia Luka neighborhood. The numerous monuments in the extensive area to be inundated are to be studied during the next two or three years.

The expedition was divided into three sections. The first examined both shores of the Volga between Kuĭbyshev and Tsarevshchina and excavated Lugovoe cemetery in the Tatar A.S.S.R. On the left bank of the Volga several ancient burial grounds and two sites containing flint implements were discovered, and on the right bank, a group of tumuli and an ancient settlement. Excavations were also conducted at the famous Tsarev Kurgan ("Czar's tumulus"), which marks the site of a large settlement of the Scytho-Sarmatian period on the left bank of the Volga. A cemetery containing nineteen inhumations of the Anan'ino type was excavated at Lugovoe. The burials were oriented from north to south. Bronze celts, axes, spear points, bracelets, buckles, and tubes were found.

The second section found tumuli near Piskaly in the Novo-Zuevsk region. They also excavated the Fedorovo site, where they found crude pottery and animal bones, and two tumuli southeast of IAgodovo, one of which contained a burial of the Srubnaia ("log-cabin") culture.

The third section investigated the left bank of the Volga from Ul'ianovka to Maĭna. Groups of tumuli were discovered at Petrovka, Alekseevka, Kremenka, and Ivanovka, and twenty-seven *selishche*'s were identified. On the basis of the pottery types these *selishche*'s may be attributed to the Golden Horde period. A *gorodishche* belonging to the end of the first millennium A.D. was found near IUrmanka.

13. The Bolgar Expedition (A. P. Smirnov, leader), organized by IIMK, studied the oldest part of the city and the water system discovered by chance in 1936. The work was carried on by three sections. Section *A* disclosed cultural strata ranging from the Bulgarian period to the eighteenth century. Early handmade pottery, of clay containing coarse sand, was found in the earliest stratum. The same excavation yielded isolated burials of the Golden Horde period (thirteenth to fourteenth century) and grain storage pits. Section *B* worked in two strata. The upper contained the remains of an eighteenth or nineteenth century village; the lower, belonging to the Golden Horde period, yielded glazed pottery, iron implements, Chinese porcelain, coins, and glass bracelets.

Section *C* excavated a stratum belonging to a city of the Golden Horde

period on the shore of the Malenka River. The lowest horizon yielded the foundations of a house and a well. The next contained a system of clay pipes connected by stone corner joints and laid on a stone bed, the foundations of a brick building, a pavement, and a cistern. No buildings occurred in the uppermost hroizon. The finds included 200 Golden Horde coins, fragments of glazed pottery, Chinese porcelain, hooks for rug-making, bronze padlocks, bone objects, mirrors (one of Persian workmanship with an Arabic inscription), and animal figurines.

14. The Kostenki Expedition (A. N. Rogachev, leader), organized by IIMK, continued excavation of the Magdalenian settlement known as Kostenki IV. Within an area of 350 square meters were three houses, each containing several round hearth pits. These dwellings were similar to those discovered in 1937. The three buildings, placed very close together, were connected by passages. Many bones of large animals, including *Elephas primigenius* and *Equus*, were found. Among flint implements were typical laminae, points "with blunted edges," and scrapers. Each of two other dwellings contained a hearth pit (1.0–1.20 meters in diameter and 10–15 centimeters deep). These hearth pits were surrounded by smaller pits of various shapes, some of them containing rounded gravel.

These two houses yielded fewer bone fragments than the group of three, but they contained many more fragments of mammoth tusks. Associated with them, also, was a whole series of long burins; broad, double end-scrapers; and implements having a scraper on one end and a burin on the other. Of particular interest were slate artifacts, including several round bars with polished ends and polished bi-convex slabs. Several marl tools were found, one of them bearing a carved animal's head.

The expedition also excavated a rich Bronze Age settlement located above the Paleolithic sites.

CENTRAL ASIA[11]

1. *Uzbek S.S.R.*—The Samarkand Expedition (G. V. Grigor'ev, leader), organized by the Samarkand Museum in co-operation with IIMK, excavated Tali-Barzu and Kafir Ḳal'a *gorodishche*'s, southeast of Samarkand. The former, covering four hectares, was considered one of the most ancient fortified settlements in that area. This fortress existed from the beginning of the first millennium B.C. to the Muslim conquest. Each period had a typical inventory, including various types of human and animal figurines (*Figs.*

[11] Cf. H. Field and E. Prostov, *Archaeological Investigations in Central Asia, 1917–1937*, Ars Islamica, Vol. V, Pt. 2, pp. 233–271; and *Excavations at Khwarazm, 1937–38*, Ars Islamica, 1940.

5 and 6). Pre-Greek, Greek, Buddhist, and Sasanian styles were clearly expressed.

Several agricultural implements, including an iron plowshare, and an ancient irrigation system with a reservoir testified to the practice of gardening and the use of artificial irrigation in Samarkand prior to the Greek conquest. A potsherd of the first century B.C. bore a Sogdian inscription. Much material of importance for the history of the pre-Muslim period, of which so few written records exist, was brought to light by this expedition.

2. The First Uzbekistan Expedition (A. P. Okladnikov, leader), organized by UZKOMSTARIS in co-operation with IIMK, explored caves in the valley of the Turgan Darya River.

At Teshik-Tash cave, twenty kilometers northwest of Baisun, five strata containing Mousterian implements were excavated. Here was found the skeleton of a Neanderthaloid child which has been reported.[12] This cave is the first Paleolithic site yet discovered in Central Asia.

2. The Second Uzbek Expedition (G. V. Grivor'ev, leader), organized by UZKOMSTARIS in co-operation with IIMK, attempted to discover the connection between the tumulus burial ground at Ĭ Ângi-Ĭ Ûl (Yangi Yul) and the Kaunchi-Tepe *gorodishche*. The tumulus contained three flexed burials, with the head oriented to the northwest. Such burials occurred in the second (Sacan) stratum of Kaunchi-Tepe.

The inventories included three jugs, two cups, three vessels, and several drinking cups with handles in the form of rams and other animals. All pottery was handmade. Associated with one of the burials was an iron knife and an iron buckle.

The other tumuli in the cemetery contained later graves of Turkish nomads. The burials were usually double, with an old man and a young woman in each. The inventory associated with male skeletons included straight, double-edged, iron swords (90 centimeters long) with straight handles; iron daggers with wooden handles; tri-bladed arrowheads; arrows with triangular shafts; and iron and bronze buckles. Round-bottomed vessels flattened on one side had probably been used to carry water on horseback. Accompanying the female skeletons were bronze mirrors, bronze fibulae, bone combs with carved horses' heads, earrings, rings, and wheelmade, narrow-necked, pear-shaped jugs. In two instances daggers accompanied female burials.

[12] Cf. H. Field and E. Prostov, *American Journal of Archaeology*, Vol. 43, (1939), pp. 331–332; A. P. Okladnikov, *Nakhodka neandertal'tsa v Uzbekistane*, in Vestnik Drevneĭ Istoriĭ, 1939, No. 7, pp. 256–257; and Aleš Hrdlička, *Important Paleolithic Finds in Central Asia* (Science, September 29, 1939), pp. 296–298.

Under each tumulus ran a corridor, dug at a depth of from two to five meters. Entrance to the rectangular catacomb was usually found on the north wall of the corridor.

1. *Kazakh S.S.R.*—The first Kazakhstan Expedition (A. N. Bernstam [Bernshtam], leader), organized by the Kazakhstan branch of the U.S.S.R. Academy of Sciences in co-operation with IIMK, excavated the ancient city of Taraz, the site of which had been discovered in 1936. Five cultural strata, from the ninth to the nineteenth century A.D., were uncovered. The stratigraphy of the town was established through pottery sequences. In addition to local types there were imitations of Chinese pottery and imported Iranian and Samarkandian ware. Dwellings of the tenth to the twelfth century contained rich inventories illustrative of local everyday life during that period. Numerous coins were found: a new type, Turgesh; many early Ilek coins (from the end of the tenth and the beginning of the eleventh century); and one gold coin bearing a rude representation of an eastern Roman solidus of the fifth century. The territory of the city proper (*shahristan*) and the eastern gate and the southern wall were investigated. A system of water mains of the eleventh or twelfth century was discovered. A bath had walls decorated with frescoes. This was the first structure of its type and period to be found in Central Asia.

Remains of pre-Mongol structures included pavements, sidewalks, irrigation canals, and wells. Among objects of particular interest were terra cottas, a slate tablet with an Uigur inscription, and a clay pot with a Syrian inscription.

The expedition surveyed the territory adjoining Taraz on the west, down to Lake Botli-kul. A number of *gorodishche*'s were registered. The ancient area of Kavakib, with the cities of Adakhkes and Dokh-Nudzhikes, known from Arabic and Persian sources, was located. A Sarmatian settlement and cemetery attributed to the first centuries of the Christian era were discovered. The tumuli yielded pottery, gold objects, and ornaments, including earrings. An archaeological map of the valley of the Talas River was made on the basis of the 1936 and 1938 expeditions.

2. The Second Kazakhstan Expedition (S. S. Chernikov, leader) from IIMK participated in the work of the Dzhelambet group of the Central Gold Prospecting Bureau of the U.S.S.R. and investigated the ancient gold mining centers at Stepni͡ak, Stalinskiĭ Rudnik, Dzhelambet, Bes-ti͡ube, Burli, Martan'i͡at, and Aul'nai͡a Ploshchad', and copper mining centers at Anzily and Uro-ti͡ube.

The mines consisted of irregular pits and trenches with small subterranean passages. Fire was used in working the ore. Stone implements, including

hammers, picks, and pestles and mortars for grinding ore, were found nearby. The implements belonged to the Andronovo-Karasu period (end of the second and beginning of the third millennium B.C.). Eight sites of this period, the first in this area, were located. Ancient ocher mines and many tumuli of various types were recorded. Stone, bronze, and bone implements and sherds were collected.

A. G. Timofeev, also of IIMK, participated in the expedition of the Kazakhstan Geological Bureau.

Many tumuli were discovered in the Karkaralinsk *raĭon* of the Kazakh S.S.R. The majority of these belonged to the time of the later nomads, but a few were of Andronovo type, possibly of the Karasuk period (first centuries of the Christian era). Large stone sculptures (*babas*) of Turki type were found in the Kyzyl-rai mountains. Isolated objects from within the city limits of Karkaralinsk on the right bank of the Karkaralinka River testified to the presence of additional sites, some of which may have belonged to the Andronovo period.

Kirghiz S.S.R.—1. The Kirghiz Expedition (A. N. Bernstam, leader), organized by the Scientific Committee of the Council of People's Commissars of the Kirghiz S.S.R. in co-operation with IIMK, made a systematic exploration of the upper course of the Talas River from Dmitrievskoe to Dzhambul and of the banks of the Chu River near Tokmak. Four sites were identified with cities mentioned by al Muḳaddasī at the end of the tenth century, as follows: Sheldzhi (Sadyr-Kurgan *gorodishche*); Susy (Chaldyvar *gorodishche*); Kul (city of Dzhaman Kurgan); and Tekabket (AK-T͡iube *gorodishche*).

On the upper course of the Talas a burial structure (*gumbez*) of the fourteenth or fifteenth century, believed by the Kirghiz to be the grave of their epic hero Manas, was found to cover the grave of one Kenizek Khatun.

A cemetery with catacomb burials of the first to the third century A.D. was discovered and partly excavated. Rich inventories collected from the catacombs included pottery, Chinese silk cloth, Chinese lacquer, a bone bow, wooden objects, and inlaid ornaments. Several other cemeteries of the second half of the first millennium A.D. and many other monuments were recorded.

In the course of a search around Tokmak for the ancient city of Belasagun all the largest *gorodishche*'s of the area were charted and exploratory trenches dug.

On the basis of available evidence it was thought possible that the *gorodishche* of the (greater) Ak Peshin was the site of ancient Belasagun.

At a site believed to embody the remains of ancient Saryg, near the

Krasnaĭa Rechka River, a pottery handle bearing a Sogdian inscription was found.

Work was to be continued at the catacomb burial ground on the upper course of the Talas River and at the ancient cities in the valley of the Chu River.

URAL AND ALTAI AREA

1. The Kama Expedition (M. V. Tolitskiĭ, leader), organized by the Kudymkar Museum in co-operation with IIMK, engaged in exploratory work along the In'va River and its tributaries. Seventeen *gorodishche*'s and ten *selishche*'s were discovered. Stone implements were collected at a number of surface stations.

A Sasanian dish was found in the Syrenka locality near Stan.

A Paleolithic site was discovered at Ostrov, near Perm, below an eleven meter terrace contemporaneous with one of the stages of the Würm glaciation. In cross-section the site was represented by a stratum eight meters long and in some places nine centimeters thick. Bones of mammoth, reindeer, and rhinoceros were associated with several dozen flint and slate implements and flakes, as well as a limestone plaque decorated with two red paint streaks.[13] This site at Ostrov, located in the central Urals, is the most northerly Paleolithic site yet found in the U.S.S.R.

2. The South Ural Expedition (S. N. Bibikov, leader), organized by the Cheliabinsk Museum in co-operation with IIMK, found Paleolithic sites in the caves of Buranovskaĭa and Kliuchevaĭa, in the Katav-Ivanovskiĭ region. A rich inventory of flint implements, charcoal from the hearth, and the remains of fauna was found. This discovery gave promise of establishing connection between the Siberian and the eastern European Paleolithic sites, separated at the present time by the still unexplored areas of Bashkiria, the Urals, and the western Siberian lowlands.

3. The Saĭan-Altaĭ Expedition (S. V. Kiselev, leader), organized by the State Historical Museum in co-operation with IIMK, continued to study the monuments of the Uĭbatskiĭ Chaatas.

Two earthen tumuli of the Tashtyk period were excavated. One of them had a double chamber. The walls of the outside chamber coincided with the walls of the burial pit and consisted of short, vertical poles which formed a solid wall. Separated from the outer wall by a corridor one meter broad was an extensive structure somewhat in the form of a log cabin. A wide, slanting entrance connected this structure with the outside. This entrance

[13] This plaque recalls the Azilian painted pebbles and Australian churingas. Cf. W. J. Sollas, *Ancient Hunters* (London, 1915), pp. 95–96.

had been covered by a huge stone slab. The arrangement of the dead in this tumulus was distinctive. Earthen or wooden biers were placed along the walls in a sort of glass-lined nest.

The most interesting objects were masks, many of which had marks suggesting tattooed designs. A carved male head possessing Mongoloid features, many well-preserved wooden objects, and several sheep's astragals[14] (*al'chik*), some of them decorated, were found in one tumulus. Each of the graves, which were arranged in rows, contained three skeletons. The inventories resembled those from Derestuĭskiĭ Kultuk on the Selenga River [Buriat-Mongolian Republic].

In addition to pottery, late Tashtyk graves yielded iron brackets (*skoba*) and wooden trays of Oglakhta[15] type piled with bones of *Bos* and *Ovis*.

The expedition also excavated a tumulus (30 meters in diameter) of the Karasuk period containing a stone box in the center. A late intrusive Tatar burial was found in the upper part of the tumulus.

SUMMARY

This report gives in brief results obtained by Soviet archaeologists during 1938–1939. The authors wish to express their gratitude to the Director of IIMK, who submitted the report from which this paper was largely written. The President of VOKS transmitted the IIMK document to the Soviet Ambassador in Washington, who forwarded it to Chicago during last September.

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CHICAGO, ILLINOIS

[14] Cf. eighth century B.C. terra cottas from Tanagra where two girls are represented playing the game of astragals; also Horace, Book II, Satire III; and E. Lovett, *The Ancient and Modern Game of Astragals*, Transactions Folklore Society, vol. XII, No. 3 (London), pp. 280–293.

[15] Cf. A. M. Tallgren, *The South Siberian Cemetery of Oglakty from the Han Period*, Eurasia Septentrionalis Antiqua (1937), Vol. XI, pp. 69–90.

THE VODUN SERVICE IN NORTHERN HAITI*

By GEORGE EATON SIMPSON

INTRODUCTION

THE THEOLOGY of the *vodun* cult comes to life in the *vodun service.* The true believers look forward to these dramatic ceremonies with eager anticipation; the skeptical regard them with suspicion but are afraid to ignore the *Zanges*, or *vodun* gods; while the non-believers either stay away and speak with contempt of the priests and the gods or else they go to enjoy the social aspects of a big ceremony.

In spite of a basic similarity throughout the country there are regional variations in the manner of conducting *vodun* ceremonies, and some of these differences will be indicated later. Since each priest has supreme authority in his own temple, one finds deviations in the execution of the ritual in the same locality. The description of the *vodun service* of northern Haiti which follows is based upon: a ceremony witnessed on July 17, 1937; parts of ceremonies staged in my house on a number of occasions by informants some of whose relatives were *houngans*, or *vodun* priests;[1] information supplied by my interpreter, Mr J. B. Cinéas, and conversations with priests, *servants*, or persons who become possessed by the gods at *vodun* ceremonies, and ordinary believers of the cult.[2] Comparative data have been secured from conferences with Dr Price Mars, Dr J. C. Dorsainvil, and Professor M. J. Herskovits, and from their published materials on the *vodun* cult.[3] In addition I had an opportunity to attend a complete ceremony at Léogane in February, 1937.

A prominent priest holds *vodun* rites on the festival day of the Catholic Saint who corresponds to the principal god of his temple. Ceremonies are also held when a *vodun* god or a dead relative demands them, that is, when a priest advises a client to arrange a *service.* A ceremony is held for one or more purposes such as: thanksgiving for some favor, the expiation of an offense against the gods, to propitiate the gods, or simply to show respect for

* The data on which this article is based were obtained during a seven months field trip to Haiti in 1937. I am indebted to the Social Science Research Council, New York City, for the post-doctoral fellowship which made this study possible and to Professor M. J. Herskovits of Northwestern University for invaluable advice.

[1] These individuals were: Bertrand Velbrun, Terméus Joseph, Ulysse Marius, Arsène Pierre Jean-Baptiste, and several others whose names I did not obtain.

[2] In this group were Madame Petit-Homme, Anazine Merveilleuse, Termitus Boisier, Madame I. Maximain, Anesthal Joseph,——Zepherin, Augustin Vernal, and others.

[3] Price Mars, *Ainsi Parla L'Oncle;* J. C. Dorsainvil, *Vôdou et Nevrose*, and *Vôdou et Magie;* M. J. Herskovits, *Life in a Haitian Valley.*

and pledge loyalty to them. Some of my informants assert that each believer enters into a sort of contract with his chief god which obligates him to give a ceremony each year in return for the protection which he gets from the *Zange*. If he cannot afford to give a big *service*, he gives little offerings from time to time and gets permission from the god to postpone the big ceremony until he is more prosperous.

The peasants attribute very human characteristics to the gods, and they believe that the way to please them is to give them a good time. They do this by providing food, drink, music, songs, dances, and gossip for their enjoyment. If the ceremony is given primarily to thank the gods for favors recently received, such as recovery from illness or success with the crops, it is usually held at the *humfort*, or temple. If the main purpose of the ceremony is to ask the gods to cease persecuting the family by ruining the crops, sending diseases to the children or to the live stock, or causing other misfortunes, it is customary to hold it on the family's land. Ceremonies given especially for the dead are always held on the family estate.

Before the American Occupation the most important ceremonies at famous temples, such as those at Souvenance, l'Anse-Rouge, Léogane, and Arcahaie, are said to have lasted as long as six weeks. Informants say that hardly any of the ceremonies at these places lasted less than a week. Formerly the longest ceremony in Plaisance is said to have run for three weeks, and the shortest took one day and one night. Whether ceremonies of a generation ago were prolonged for a period of from three to six weeks, or whether this is idealization, I cannot say. Today, however, a ceremony near Plaisance rarely has a duration of a week, the average time is less than two days, and some *services* are completed in less than twenty-four hours.

The cost of a *service* depends mainly on its duration, but also on the priest's fee. This fee varies with the reputation of the priest and the ability of the client to pay. A widely known priest charges from $20.00 to $40.00 for a ceremony, while a man of lesser ability may ask as little as $5.00. Money is required to buy animal and other sacrifices, clothes for the animals, and food and drink for the reception which follows the ceremony. If there are guests from other towns and villages, they must be fed; and if the ceremony lasts a week or more, the cost of this entertainment is very great. The least expensive *service* costs $15.00 or $20.00, and one which lasts several days might easily cost $150.00 or more.

THE VODUN SERVICE NEAR PLAISANCE

A family spends months preparing for a *service*. The priest's fee, chickens, goats, liqueurs, and all of the accessories which are indispensable for

the ceremony, as well as the supplies for the guests, must be accumulated. This is usually a gradual process and frequently it is one which entails much sacrifice. If the ceremony is held on the family estate, the house has to be repaired, whitewashed, and trimmed with yellow paint.

On the day of the ceremony experienced hands carefully arrange the colorful *vodun* altar with its collection of flags, chromoliths of Catholic Saints, crucifixes, holy water, choice foods and liqueurs, dishes, goblets, flowers, perfume, rosaries, candles, thunder stones,[4] and various other objects which are thought to have some magical properties. About four o'clock in the afternoon the officiating priest appears in the garb which his chief god is thought to wear. Since the garments of the gods vary greatly, one priest wears military clothes, another has a hat made of paper and covered with silk in imitation of a bishop's miter, others wear brilliant multicolored robes, while some simply tie silk handerchiefs of appropriate colors around their necks. Regardless of his costume the officiant always carries a small handbell. His first act is to trace cabalistic designs on the ground with cornmeal, syrup, *tafia* (raw rum), and liqueur while he sings:

Fais verver pou moin, s'ou' plé.	Make verver[6] for me, if you please.
La famille qui mangé sang,	The family which eats blood,
Ou pas oué moin innocent?	Do you not see that I am innocent?[6]

This is the beginning of the ceremony and the members of the crowd immediately become attentive.

After making *verver* the officiant turns his attention to the twins.[7] He prepares food for them by taking three or four winnowing baskets which have been covered with white tablecloths, and mixing together boiled corn, fried corn, uncooked corn, fried pistachio, shredded cocoanut, cornmeal,

[4] Polished stone axes made by the Indian aborigines of Haiti. The peasants believe that these stone axes are stones which have dropped from the sky during thunder storms.

[5] This refers to the tracing of designs on the ground mentioned above.

[6] Many of these songs are untranslatable, and some of them are incomprehensible to the peasants who sing them. The general meaning of this particular song is "Gods who punish by killing, I have done no wrong," and this is probably understood by everyone. However, the significance of many of these chants for present day vodouists lies not in their words, but in their rhythm and in their emotional overtones.

[7] The *marassa*, or the *marassa-jumeaux*, as the twins are frequently called, are a special category of the dead, and they, as well as the other dead, must not be overlooked in any *service*. The *marassa* (dead twins of the family) must not be confused with the god Marassa, the *vodun* equivalent of the Catholic Saints, Comas and Damien. There seems to be an important regional difference at the beginning of the *service* in the North. The *action de grace* described by Herskovits, *op. cit.*, 157–161, does not precede the making of *verver* and the other opening rites as it does in Mirebalais.

millet, boiled plantains, fried plantains, uncooked plantains, yams, eggplant, cucumbers, rice, beans, potatoes, cabbage, water cress, fish, herring, codfish, cakes, bread, candy, all kinds of liqueurs, and coffee. When all is ready he begins a chant for the twins.

La famille oh! semblé-hé![8]	The family assembles!
Dosu, Dosa, Marassa-Jumeaux,	Dosu, Dosa,[9] Marassa-Twins,
Si ou cré moin mangé déjà,	If you believe that I have already eaten,
Misère pou dos-yo!	Misfortune be upon you!

After thus inviting the twins to come to the ceremony the priest sings another song in their honor.

Jumeaux-yo, mé boué, mé mangé.	Twins, here is drink, here is food.
Dosu, Dosa, Marassa-Jumeaux,	Dosu, Dosa, Marassa-Jumeaux,
La vie moin l'en main Bon-Dieu!	My life is in the hands of God!

The priest offers a third chant for the twins before presenting them with food.[10]

Jumeaux, Jumeaux, pressé pou ouè	Twins, Twins, hasten to see
Côté jumeaux mangé!	Where the twins are eating!

The drummers beat a rhythm as the officiant puts that part of the food which is to be given to the twins in calabash dishes. These offerings are then placed under trees, at springs, crossroads, and at all of the places which the twins are believed to visit. As this is done, the priest sings again:

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[8] The singer improvises words of his own here and there, and adds syllables such as: *oh, yo, ho, no, ah, ya, hé, yé,* etc., to perfect the rhythm.

The Créole of Haiti is made up mainly of French words, but there are also English, Spanish, Indian, and African words in it. According to Herskovits, *op.cit.*, 22–23, the "languages (of West Africa) were and are mutually unintelligible," but "structurally and idiomatically they were much the same. . . . The slaves, having mastered a requisite number of words in the language of their masters, merely poured them into this mold of their own linguistic patterns and, approximating the phonetic values of such words in terms of the West African modes of speech, thus established a means of communication between one another, no matter what their tribal derivation." On this point see also Suzanne Sylvain, *Le Creole Haitien: Morphologie et Syntaxe.* Créole is the language that all Haitians have in common, although it varies somewhat in different sections of the country. The members of the élite speak French.

[9] *Dosu* and *dosa* are the terms for male and female children born after twins.

[10] It may be cult practice to sing three songs for the twins before giving them food. The explanation given me was that some of the twins are always tardy, and that it is important to allow ample time for all of them to arrive at a ceremony, otherwise there might be complaints and reproaches in the future.

Jumeaux-yo, mêrê mangê	Twins, here is food
Na pê ba ou.	That we give you.
Jumeaux gangnin l'habitude,	Twins have got the habit,
Quand yo ba yo,	When they give them (food)
Yo dit yo pas mangê!	To say they have not eaten!

After expressing the hope that after they have eaten the twins will not claim that they have received nothing, he implores them to go away and leave the family alone.

Renvoyez jumeaux.	Send away the twins.
Jumeaux-bois, allez lan bois!	Twins of the forest, go back to the forest!
Renvoyez jumeaux.	Send away the twins.
Jumeaux-d'leau, allez lan d'leau!	Twins of the water, go back to the water!
Renvoyez jumeaux.	Send away the twins.
Jumeaux-la'caille, rêtê la'caille!	Twins of the house stay in the house!
Renvoyez jumeaux.	Send away the twins.
Jumeaux-barriere, rêtê lan barrière!	Twins of the gateway, stay at the gateway!

About seven o'clock the priest continues the *service* by consecrating the sacred places, that is, the springs, brooks, trees, crossroads, and other places which are supposed to be the abodes of the gods or the sites which they like to visit. He sprinkles these places with a sprig of orange leaves dipped in holy water. This water may or may not have been obtained in the Catholic church, but the ritualistic formulas which he repeats are certainly of Catholic origin. The priest then offers libations to the gods, throws white flour and pours liqueur on the ground, and tosses fried corn in the air. All of these actions are accompanied by drumming, but this ceases while he delivers a brief address.

Friends, we demand silence and meditation. Those who cannot remain serious may leave at once. The ceremony we are about to begin is not a joke. The master of this ceremony wishes to pay a heavy debt which has been disturbing and crushing him. He offers this ceremony to the gods of the water, the gods of the forest, the gods of the sky, to all of the gods, known and unknown, but especially to Saint John and to Erzilie. If any disbelievers try to spoil this ceremony, powerful gods will take revenge on them, and as for the jealous persons who are accustomed to interfere with *services*, by the grace of God, I feel myself strong enough to overcome their evil intentions. When I am conducting a ceremony there is never any disorder!

He now rings the handbell and blows his whistle; and at the same time his assistants, who are called *badjicans*, strike the triangle, shake the

chachas, beat the drums, and wave the ceremonial flags. These acts constitute the *sagwe*, or salutation, to the *vodun* gods. After commanding the participants to kneel, the priest begins a series of songs and prayers. Included in this melange are morning and evening prayers, the Pater-noster, the Credo, the Ave Maria,[11] and the Magnificat, all rendered in mutilated form, as well as songs and prayers peculiar to the Haitian *vodun* cult. One type of *vodun* prayer and one song will serve as examples of the latter.

Oh, Marie, Mère de Misèricorde, ayez pitié cé pôv' âmes délaissées. Marie Apolita, Mère de Dieu, mère des mères, mère de grâce, priez pou' ces âmes convertiés, les âmes du purgatoire. Tous les Saints, tous les anges, anges du ceil, Zanges d'leau, Zanges bois, Zanges connis, et inconnis, tous les Saints, tout' jumeaux, venez délivrer ce pauv' frère de tribulation. Pas permett' mové zesprit gaté service. Oh! les morts, suspendé persécuté li, fais-li gangnin la paix, le repos, la limière iniverselle. Vini secourez li. Li pas jamais réfisi ou an rien. Temps-là raide, li fait sacrifice pou ou, pas fais li honte devant démon. Prié bon Dié fort pou li, pou li victoire ses ennemis, pou' li terrasser Lucifer et ses satans. Grâce! Misèricorde! Pardon!

Oh, Mary, Mother of Mercy, take pity on these poor, abandoned souls. Mary Apolita, Mother of God, Mother of mothers, Mother of Grace, pray for these converted souls, these souls of purgatory. All the Saints, all the angels, angels of the heavens, gods of the water, gods of the forest, gods known and unknown, all the gods, all the twins, come and deliver this poor brother from tribulation. Do not permit bad spirits to spoil the *service*. And you, the dead, stop persecuting him, make him prosperous, give him peace, repose, complete understanding. Save him, for he has never refused you. Times are bad, but he offers you a great sacrifice. Do not let him be shamed by the devil. Fervently pray God that he may be victorious over his enemies, that he may triumph over Lucifer and his demons. Grace! Mercy! Pardon!

Not' Père, je vous salue, Marie.	Our Father, I greet you, Mary.
Zanges, luminain.	Zanges, enlighten us.
Not' Père, je vous salue, Marie.	Our Father, I greet you, Mary.
Zanges, luminain.	Zanges, enlighten us.
Not' Père, je vous salue, Marie.	Our Father, I greet you, Mary.
Zanges, luminain.	Zanges, enlighten us.
Moin dit: Not' Père,	I say, Our Father,
Je vous salue, Marie encore.	I greet you again, Mary.
Zanges, luminain. Na luminain!	Zanges you must enlighten us!

The priest is now in the heart of the *service*, and it is time to summon

[11] Sometimes the priest asks for the "converted women," that is, the women who perform their Catholic devotions regularly. They come forward and, with their beads, recite Catholic prayers. If the officiant does not know the prayers of the Church he is replaced by a *badjican*, another priest, or anyone present who is familiar with the Catholic ritual, and this person conducts this part of the ceremony. The *pret' savanne* does not take an active part in the *vodun* ceremony in the North. See Herskovits, *op. cit.*, 157.

Legba.[12] This god, venerated because of his age and character must be the first to arrive at a ceremony.[13] The priest welcomes him with a chant:

Ah! Legba yé!	Greetings, Papa Legba!
Ah! Legba nan la cour-là,	Ah, Legba in the court,
Nou rivé pou service yo.	You come to their service.

Refrain

Acon, qué yé!	Sing rattle, sing!
Qué yé, parraine oh!	Sing, god-father-oh!

All of the participants repeat the chant, and the movements of those who are dancing in the circle become somewhat more animated. If Legba does not respond to the first invitation, the officiant must call him with greater insistence.[14]

Ah! Legba couri vini oh!	Legba come running!
M'embarrassé! M'embarrassé!	I am embarrassed!
Moin doué, moin payé!	I owe and I am going to pay!
Côté Legba yé?	Where is Legba?

Sometimes this song is followed by a repetition of the "Ah, Legba yé" chant. Everyone realizes that Papa Legba is old and that he cannot hurry because of a limp, but if there is too great a delay some begin to wonder if a jealous priest, angry because he was not chosen to conduct the ceremony, is trying to spoil it by preventing the arrival of the gods. Others think that one of Legba's servants has "tied"[15] him. The harassed priest redoubles his

[12] Herskovits reports, *op. cit.*, 160, 173, 180, 190, that a *boucan* (bonfire) is always made for Legba at Mirebalais, but it is not customary to do this in the North. In fact, no bonfire is made for any god at a ceremony in this part of the country. In the Artibonite a fire is always built for the Garde Ammon and when this god possesses a *hunsi* (woman assistant of the priest) she dances in it, and is said to take a red hot *machete* from the flames and put it in her mouth. My informants know of two cases in the North where fires were built for persons possessed outside of ceremonies. These possessed individuals danced in the fires, but neither of them was possessed by Legba.

[13] Legba appears first, according to Professor Herskovits' informants, because, as guardian of the crossroads, the highway, and every gateway, he opens doors. It is necessary for him to come first so that the other gods can pass the various barriers and get to the ceremony. I do not have this explanation specifically in my notes, but Legba is regarded as the guardian of the crossroads in the North, and the explanation just mentioned may be implicit in the reference to Legba's "character."

[14] It may be traditional to sing three songs for Legba at these ceremonies.

[15] If a servant of a god does not want to become possessed at a ceremony he can keep him away from the *service* by saying a prayer and tying two knots in his handkerchief, and then tying the handkerchief to his bed or to a chair, or putting it under a rock. Or he can accomplish the same end by making certain marks on his head and in his hair. One procedure for bringing on possession in a servant who has tried to "tie" his chief god is for the priest to

efforts. He snaps his magic whip, strikes his feet with it, speaks the language of the gods,[16] makes mysterious signs in the air, and enters the house to perform special rites. When he returns his eyes are distended and his face is distorted. He walks to the entrance of the *habitation* (the family land and houses) and returns to the ceremony singing another Legba song.

Ah! Legba, mê boué, mê mangé.	Legba, here is drink, here is food.
Ah! Legba, mê boué, mê mangé.	Legba, here is drink, here is food.
Parraine-Legba qui rêté ici-là,	God-father Legba, who stays here,
Ya pê ba ou mangé!	We give you food!

Suddenly a dancer will whirl herself about, leaping and going through a series of violent contortions. Her behavior stimulates the dancers and the drummers as she reels, cries, and throws herself on the ground. When she stands again, her distorted face looks fatigued and she acts like an old man. She limps about, asking for a cane. This is a moment of triumph for the priest, for Legba's arrival is a sign that the rest of the ceremony will proceed smoothly, and now the drums, rattles, hand-bell, triangle, and chorus all sound together. Legba receives this salutation gravely and majestically. The priest says: "Here is Papa! Here is Papa! Here is Papa! Papa, we say 'Good evening' to you. Papa, where were you? How you have made us suffer!"

Calm is restored as Legba throws the water that the priest gives him, pours liqueur on the ground, and tosses fried corn at those participating in the ceremony. He walks about nervously and finally gives the "salute."

Salue-é Legba, Salu-é!	Salute Legba, Salute!
Salu-é Legba, Salu-é!	Salute Legba, Salute!
Legba salu-é devant badji zenfants-yo.	Salute Legba before the shrine of the faithful.
Salu-é Legba, Salu-é!	Salute Legba, Salute!

The faithful repeat this song, and the dancing continues as Legba speaks again.

Legba oh! cé moin Legba oh!	Legba! I am Legba!
Legba couri, cé moin Legba oh!	Legba who hurries!
Legba-carrefour, cé moin Legba.	Legba of the crossroads, I am Legba.
Legba, cé moin ka commandé!	It is Legba who must command!
Legba-Roi, cé moin ka commandé.	It is King Legba who must command.

stand in front of the person whom he suspects, make the sign of the cross, and strike him on the forehead three times with a sacrificial stone. Usually these blows are hard enough to make blood spurt. The servant then begs the pardon of the angry god, and as soon as possible he unties the knots in his handkerchief, or removes the marks from his head and hair.

[16] A muttering unintelligible to those present, but supposed to be understood by the gods.

When the priest gives him a black chicken Legba goes wild with joy. He thanks the master of the ceremony for the honor that has been given him, and assures him that he has nothing to fear. Legba will ask pardon for him and will see that he is granted the protection of the gods. Then he chants:

Baingnin, baingnin,	Bathe, bathe,
Baingnin bête-là.	Bathe that beast.
Ou va laver pied,	You will wash the feet,
Ou va laver tête oh!	You will wash the head, oh!

After the chicken has been carefully washed and perfumed, Legba caresses it. Then he begins to dance spiritedly with the chicken, and during the course of the dance he wrings its neck. This done he throws it to the ground and the priest makes "verver"[17] over it as he sings the "Ah Legba yé!" chant. This song is followed by another.

Poule-là mangé lan grand-caille.	The chicken has eaten in the big house.
Li boué d'leau lan gobelet.	He has drunk water from the goblet.
Poule mangé mais 'Guétor.'	The chicken has eaten the maize of 'Guétor.'
Li boué d'leau lan gobelet.	He has drunk water from the goblet.

The climax of the important Legba rites has been reached and the priest tapers off this part of the ceremony with a final chant for the old god.

Moin baille mangé moin, vié Legba.	I offered my sacrifice, venerable Legba,
Nou tout' mangé li.	And you have eaten all of it.
Moin rhélé houngan Sannitte oh!	I call houngan Sannitte-o!
Moin baille mangé moin, vié Legba.	I offered my sacrifice, venerable Legba.
Nou tout' mangé li.	You have eaten all of it.

While the priest sings, the members of the family and the aides of the *houngan* sprinkle water on the chicken.

Tout ça qui vlé jeter d'leau pou loas oh!	All those who desire to throw water for the gods-o!
Tout ça qui vlé jeter d'leau pou loas oh!	All those who desire to throw water for the gods-o!

Finally, Legba gives the chicken to the cooks.

[17] There are two ways of making "verver." One is the tracing of cabalistic designs on the ground at the beginning of the ceremony and is mentioned earlier in this article. The other practice consists of muttering mysterious words, making the sign of the cross, and throwing holy water, food, and liqueur over an animal which is about to be sacrificed, or one which has just been sacrificed. It is to the latter series of acts that we refer here.

After a lull the priest starts a song for another god.[18] She needs no coaxing, and as Mambo Ya-Djoni takes possession of one of her servants, an assistant of the priest tosses her the red and white kerchief which she likes.

Mambo Ya-Djoni!	Mambo Ya-Djoni!
Mambo pas la.	Mambo is not here.
La pè vini.	There she comes.
Mambo pas la.	Mambo is not here.
La pè vini.	There she comes.
Ya-Djoni, mé Mambo!	Here is Mambo!
Yab branni!	Yab branni!

Before this possession has worn off the *houngan* honors a third god by leading a song for him.[19] Agwé "mounts"[20] a servant, joins in the singing and dancing, and then performs the customary rites with the chicken which the priest gives him.

Agwé Oyo, map quittè rond-là	Agwé Oyo, I am leaving the dance
Nan main "Ca na fait."	To the indifferent one [or: In the hands of "It makes no difference"]
Agwé Oyo, map quittè rond-là	Agwé Oyo, I am leaving the dance
Nan main "Ca na fait."	To the indifferent one.
Agwé Oyo, ma prallè.	Agwé Oyo, I am going away.
Map quittè rond-là	I am leaving the dance
Nan main "Ca va loh."	To the indifferent one.
Map prallè la caille	I am going home.
Agwé Oyo,	Agwé Oyo,
Map prallè la caille.	I am going home.
Agwé Oyo,	Agwé Oyo,
Qui l'hèr na vini	When will you come
Ouè nous?	To see us?
Pays changé!	The country has changed!

[18] After Legba's arrival there is no special order for the other gods to come to a *service*. The sequence at no two ceremonies is the same because the ritual is not standardized, and also because at every ceremony some of the gods appear without being summoned by the priest.

[19] No sharp distinctions are made in northern Haiti between the Arada gods and gods derived from other African cults. Therefore, separate ceremonies are not held there for Arada, Petro, Guinée, Ibo, Congo, and other African tribal gods. None of the vodouists near Plaisance could classify the gods they know according to these or any other categories. Some of them are acquainted with a few of the Petro gods, but in their thinking and in their ceremonies they treat them as if they were Aradas. (Compare with Herskovits, *op. cit.*, 149, 310–314.) In the West, and perhaps in the South and in some parts of the Artibonite, special ceremonies are held for the Petro gods. At Mirebalais Herskovits found that the worship of Congo and Ibo gods was restricted chiefly to individual families.

[20] When a god takes possession of one of his servants he is said to "mount his horse."

One of the favorite gods in the North is the aristocratic female *Zange* known as Erzilie, or Erzulie, or simply Zilie. When the *houngan* wants her to make her appearance, he begins a Zilie song.

Grande Erzile Dosbas hé!	Grande Erzilie Dosbas hé!
Manman palé ou.	Mother talked to you.
Ou pas vlé coute.	You would not listen.
Papa palé ou.	Papa talked to you.
Ou pas vlé coute.	You would not listen.
Grande Erzile Dosbas hé!	Grande Erzilie Dosbas hé!
Grande Erzilie Dosbas hé!	Grande Erzilie Dosbas hé!
Quand nallé, ça na dit?	When we return, what can we say?
Mais quand nallé, ça na dit	When we return what can we say
Zenfants-yo?	To their children?
Grande Erzilie Dosbas yé!	Grande Erzilie Dosbas yé!
Grande Erzilie Dosbas yé!	Grande Erzilie Dosbas yé!

The drumming, dancing, and singing continue and Erzilie takes possession of a young woman. The priest then leads the song which is appropriate to welcome Zilie to a ceremony, and it is taken up and repeated by the participants.

Jeté d'leau pou' Grande!	Throw the water for Grande (Erzilie)!
Grande pas té la.	Grande (Erzilie) did not come.
A là lapé dormi.	Because she was sleeping.
Jeté d'leau pou' Grande!	Throw the water for Grande (Erzilie)!
Alo mi yo!	Alo mi yo!
Jeté d'leau pou' Grande—oh!	Throw the water for Grande (Erzilie)—oh!

Some one hands Zilie a silk scarf, and she goes around the circle wiping off the faces of a number of those within reach. After shaking hands vigorously with several individuals and kissing some of them on the cheek she starts a new chant.

Zilie oh! A pas Zilie ça?	Zilie! Is it not Zilie?
Nan lan mer canot chavir.	In the sea a boat was shipwrecked.
Si pas té bon Dieu,	Without the aid of God,
Nous toute ta nayé.	All of us would have drowned.

The violent and dangerous Linglessou comes to a ceremony uttering reproaches and threats. His song is in keeping with his reputation.

Cinq coups de couteau, cinq coups de poignard	Five stabs with a knife, five stabs with a dagger

Moin baille manman, moin baille papa-moin,	I gave my mother, I gave my father,
L'en Guinée pou' refaire pou' moin.	For the African spirit to renew my charm.
Point-là utile.	My magic charm is useful to me.

The *houngan* replies with a jocular chant.

L'Inglessou Waya,	L'Inglessou Waya,
Combien femmes ou gangnin?	How many wives have you?
Deux femmes, ou gangnin?	Have you two wives?
Ou gangnin trois.	You have three.
Ou gangnin quatre.	You have four.
Ou gangnin cinq.	You have five.
Ou gangnin six.	You have six.
Frè L'Inglessou Papa,	Brother L'Inglessou, father,
Sept femmes ou gangnin.	You have seven wives.

By this time the excitement of the assembled vodouists is so great that one might describe it as a sort of collective hysteria. Only ten to twenty per cent of the faithful ever become possessed at a *service*, but all of them enjoy the drumming, dancing, singing, drinking, and the mysterious rites. One possession follows another as such gods as Sans-Manman, Limba, and Saint Michael appear on the scene.

Sans-Manman,	Sans-Manman,
Côté na passé,	Wherever you go,
Na boué d'leau.	You shall find water to drink.
Oui, nous sans-manman,	Yes, you have no mother,
Oui, nous sans-papa,	Yes, you have no father,
Côté na passé	But every place you shall go
Na boué d'leau.	You shall find water to drink.

Limba, or Limba Zaou as he is sometimes called, a glutton with an insatiable appetite, announces his arrival with a short verse.

Limba! Limba!	Limba! Limba!
Nou pressé pou' oué	You hasten to see
Côté Limba maché.	Where Limba walks.

Saint Michael, like the others, has difficulty in making himself heard above the din of drums and voices.

Saint Michel Archange,	Archangel Saint Michael,
Priez bon Dié pou' la Vierge oh!	Pray to God for Virgin Mary!
Grâce, aïe bobo!	Mercy, aïe bobo!
Saint Michel Archange,	Archangel Saint Michael,
Priez bon Dié pou' les Zanges oh!	Pray to God for the Zanges!

If the priest sees that a possession is too violent, he tries to calm the servant with an egg or a goblet of water, or by "speaking the language." When a *houngan* gives a possessed person an egg, she may eat it, including the shell, or she may throw it away, or she may put it under a tree. If the possessed individual is handed a goblet of water, she dances with it, pours some of it at the center pole of the *tonnelle*,[21] and some in front of the *ogan* or triangle of the *vodun* orchestra. Sometimes the god, that is, the person who is possessed by a god, then eats the glass. Candles are not used in the North to help calm a person who is too violently possessed.[22] It is interesting that although the priests in northern Haiti occasionally try to tone down a possession, they do not try to drive any *Zanges*, even those of bad reputation, away from ceremonies.[23]

As the great President Clermeil seizes one of his followers, the priest begins the Clermézine chant.

Clermézine,[24] *rellé li ban moin!*	Clermézine, call him for me!
Oh! Clermézine oh! pou' jou m'engagé.	Oh! Clermézine, ask him to come on the day I am in trouble.
Clermézine, rellé li ban moin!	Clermézine, call him for me!
Oh! Clermézine oh! pou' jou m'engagé.	Oh! Clermézine, ask him to come on the day I am in trouble.
Clermézine, rellé li ban moin!	Clermézine, call him for me!
Oh! Clermézine oh! pou' jou m'engagé.	Oh! Clermézine, ask him to come on the day I am in trouble.

When Damballa, a strong and turbulent god, comes to a ceremony, he demands alcohol and rolls on the ground like a snake. The crowd greets him with a Damballa chant and he responds with another.

Damballa, tout' Zanges, cé Zanges.	Damballa, all the Zanges are Zanges.
Damballa Wallo!	Damballa Wallo!
Damballa, tout' Zanges, cé Zanges.	Damballa, all the Zanges are Zanges.
Damballa Wallo!	Damballa Wallo!
Damballa, tout' Zanges, cé Zanges.	Damballa, all the Zanges are Zanges.
Zanges l'en bois, cé Zanges,	Zanges of the forest are Zanges,
Zanges l'en d'leau, cé Zanges.	Zanges of the water are Zanges.

[21] A *tonnelle* is a shelter erected for a *service* or a dance. The framework is made of boughs, and the top and sides are covered with palm or banana leaves.

[22] Compare with Herskovits, *op. cit.*, 185.

[23] At Mirebalais "If evil deities are to be banished or 'restrained,' they are called once more, and the priest may have to battle with those possessed by them, for these gods have no desire to be driven away, or incarcerated where they cannot escape." Herskovits, *op. cit.*, 158.

[24] Clermézine is President Clermeil's daughter.

Tout ça qui marré.	All those that are tied.
Laguê yo pou' moin!	Release them for me!
Damballa hé, illé, illé no!	Damballa hé, illé, illé no!
Damballa hé, illé, illé no!	Damballa hé, illé, illé no!
Damballa hé, illé, illé no!	Damballa hé, illé, illé no!
Petite manman marré,	The children are in trouble (tied),
Petite yo sous là tapis.	These poor children are under the carpet.
Damballe hé, illé, illé no!	Damballa hé, illé, illé no!

The terrible Soussou-Pannan, an ugly, cruel *Zange*, tries to smash the drums, goes after the *tafia*, and runs toward the goat as if he intended to bite it and suck its blood (he has the reputation of sucking the blood of live stock). He sings a threatening song.

Yon seul pitite moin gangnin.	I have only one child.
Yon seul pitite moin gangnin	I have only one child
Qui retê pou' chaché d'leau van moin.	Who stays to seek water for me.
Soussou-Pannan passé,	Soussou-Pannan is passing,
Li vlé prend li,	He wishes to take him,
Pou' li allé manger.	For he is going to eat him.
Et moin alors? Charité ma mandé?	And what will become of me? Must I ask charity?

As the ceremony progresses several of those who have already been possessed are "mounted" by other gods. Guédé, Ibo, Adjassou, Sobo, Nago Shango, and Congo are usually present at ceremonies in the North. The behavior of these *Zanges* varies greatly. Guédé, guardian of the cemetery, looks like a dead person. He wears a black robe and talks continuously in a nasal tone. He is armed with a knife and he goes around beating those who are possessed. Ibo acts like a dog. Adjassou, a *Zange* with protruding eyes, is always excited, always in a hurry, and always in bad humor. Sobo, a handsome military officer, is very calm, the antithesis of Adjassou. Nago Shango, a respected god, is restless and stern, but good-hearted, while Congo, a minor god without power, is handsome, but timid, apathetic, and almost feeble-minded. The songs for these *Zanges* follow:

Guédé-Nibo, moin devant la Croix.	Guede-Nibo, I am before the cross
Comm' oué gade là, arrêtez-yo.	When you see the guard there, stop them.
Comm' oué gade là, arrêtez-yo.	When you see the guard there, stop them.
Moin devant la croix!	I am before the cross!
Garde-à-Ibo, mandé papa	Guard of Ibo, ask Papa
Si nous content.	If you are content.

Adjassou-Miroi, vive en Dieu.	Adjassou-Miroi, live in God.
Adjassou-Miroi, vive en Dieu.	Adjassou-Miroi, live in God.
Yo dit nan point bon Dieu.	They say there is no God.
Gangnin bon Dieu!	But God does exist!
Yo dit nan point les Saints.	They say there are no Zanges.
Poulant gangnin les Saints!	All the same the Zanges do exist!
Adjassou-Miroi, vive en Dieu!	Adjassou-Miroi, live in God.
Mé Sobo! Mé Sobo! Mé Sobo!	Sobo has come! Sobo has come!
Tcha-tcha, danouê so hê!	Rattle, shake the rattle!
Anago! Anago! Anago hê!	Anago! Anago! Anago!
Si nous mangé cabrit' déjà,	You have already eaten a goat,
Nous pas mangé cochon encor.	You have not eaten pork yet.
Anago! Anago! Anago hê!	Anago! Anago! Anago!
Congos vini oué zaffé à-yo.	The Congos have come to see their affairs.
Congo-Loas vini oué moin.	The Congo-Loas have come to see me.
Congos-Radas vini oué moin,	The Congo-Radas have come to see me,
Zaffé à-yo!	To see their affairs (to see the rites for them).

Zanges continue to arrive as the time for sacrificing the goat approaches. Although the excitement ebbs and flows most of the songs for the gods are sung enthusiastically, and sometimes two or more chants are heard simultaneously.

Saint Antoine, saints anges gardiens,	Saint Antoine, guardian angels
Priez pou zenfants-yo.	Pray for these children.
Arada, sonnez Agwé!	Arada, call Agwé!
Ou pas oué nou embarrassé?	Don't you see that we are in trouble?
L'Afrique yo mandé mangé.	The African gods demand sacrifices.
Moin travaillé assez	I have worked enough
Pou moin ba l'Afrique yo manger.	To give the African gods their food.
Jodi-là force raidi m'raidi	Today I have worked hard
Pou'm payé dette moin.	To pay my debt.
Moin mandé la paix,	I ask for peace,
Pou'm ça fait la vie moin!	And ways to earn my living!

Finally the solemn moment for the sacrifice of the goat arrives. The victim, dressed in his ceremonial coat,[25] bleats as it is led to the priest. The

[25] In the North, sheep, goats, and cattle which are to be sacrificed in *vodun* ceremonies are dressed in white cloaks on which are stitched red and blue crosses. Red and blue ribbons are tied on the horns of cattle. The beards of the goats, as well as their hair, must be well combed. No "clothing" is worn by chickens and pigs.

houngan makes *verver*, and then offers the animal three branches of green leaves while he sings:

Na prallé ba bête à les saints manger.	We are going to give an animal to the Saints to eat.
Na prallé ba bête à les saints manger.	We are going to give an animal to the Saints to eat.

The goat hesitates a little, but hunger gets the best of him and he nibbles at the leaves. The priest does not allow him time enough to eat but repeats the maneuver three times, always with the same results. The crowd is now very happy, because the eating signifies that the offering is acceptable to Saint Jean-Baptiste (or whichever *Zange* is the main one in the *service*). The officiant cries in a loud voice: "Vive Papa Bon-Dieu! Vivent les Saints! Vivent les Anges! Vivent tout'zenfants!" The drums are beaten furiously, and are accompanied by rattles and a triangle. The participants repeat the words of the priest many times. Ogoun-Tonnerre (Saint John) mounts the goat, rides it around as if it were a spirited horse and when the goat is tired, lifts it to his shoulders and dances with it. After some time he gives it to the sacrificer, a person appointed by the *houngan*. The priest then sings a Catholic chant:

J'engagé ma promesse au baptême.	I gave my promise at baptism.
Mais pour moi, d'autres firent serment.	But for me the others pronounce the oath.

The participants repeat the same chant, and the *houngan* says:

Priez pou li, bonne et puissante mère.	Pray for him, good and powerful mother.
Reconnaissez vos âmes!	Recognize your souls!
Mettez à genoux.	Kneel.
Du haut du ciel,	From the heights of Heaven,
Oh, les Bienheureux,	Oh, blessed ones,
Secours des Affligés!	Help the afflicted!

This is followed by another Catholic song, *There Is a King of the Angels*. Then the goat is washed for a long time to the singing of two chants:

Oumtort là senti fort.	The goat smells strong.
Oumtort là mandé baignin!	The goat demands a bath!
Baigné, baigné,	Bathe, bathe,
Baigné bête-yo.	Bathe the beast.
Ou va laver pied,	We are going to wash the feet,
Ou va laver tête oh!	We are going to wash the head!

The animal is now ready to be sacrificed and the priest intones:

Moin tê palé yo.	I had advised them.
Yo pas tê vlé couté!	They would not listen!
Cé jou ma coupé tête-à yo,	It is the day I cut their heads,
Cé jou-là ya couté moin.	It is that day they listen to me.

The *houngan* continues the rite with a couplet.

Sang apé coulé, Mouché Pierre,	The blood is flowing, Mouché Pierre,
Preparé vaisseau pou mêter sang-là!	Prepare a vessel to receive the blood!

He walks around the circle three times followed by his aides, one of whom leads the victim. A final verse is sung before the sacrifice is made.

Preparé vaisseau.	Prepare the vessel.
Mé sang-là apé couler.	Now the blood will flow.

The sacrificer cuts the head of the animal, and the blood is caught in the proper utensils. They are very careful to allow none of it to fall on the ground. The dancing becomes more animated, and the singing continues.

Grâce! Grâce, Papa Bon-Dieu.	Mercy! Mercy, God.
Grâce les Saints! Grâce les Zanges!	Mercy, Saints, Mercy, Zanges!
Aïe yo! Cé la vie nous mandé.	Aïe yo! It is life that we ask.

Catholic and *vodun* chants are smoothly interwoven as three or four chickens are added to the principal sacrifice. The priest throws *acassan* (a mixture of corn meal and milk), fried corn, liqueurs, and other foods and drinks on the body of the goat. A short distance away the cooks are very busy. The sacrificial chanting is prolonged:

Bonsoir, parraine Legba!	Good evening, God-father Legba!
Bonsoir, zenfants!	Good evening, children!
Ah! Legba mandé ou li moceau.	Legba asks you for a small piece.
Ba li moceau goûté.	Give him a piece to taste.

Tardy *Zanges*, anxious to plead for the poor man who is giving the ceremony, sing an *action de grâce* and a chant of deliverance.

Grâce oh! Grâce oh!	Mercy! Mercy!
Grâce ma pé mandé.	I ask for mercy.
Padonnain-li.	Pardon him.
Ou pas ouê cé pauv' innocent?	Don't you see this poor innocent man?
Les Saints de ciel,	The Saints of Heaven,
Ou pas ouê cé pauv' innocent.	Don't you see this poor innocent man?
Grâce oh! Grâce oh!	Mercy! Mercy!
Grâce ma pé mandé.	I ask for mercy.

Laguê pauv' malhèrê.	Release this poor, unhappy man.
Laguê pauv' innocent.	Release this poor innocent man.
Les Saints de ciel,	Saints of Heaven,
Ou pas ouê ce pauv' innocent?	Don't you see this poor, innocent man?

The *houngan* slips away for a brief rest, leaving the *Zanges* and the *fidèles* (vodouists who do not become possessed at ceremonies) to dance and sing until the food is cooked.

At six o'clock in the morning the priest, fresh and alert, begins the ceremony again. He sprinkles the food with holy water, repeats the Catholic morning prayers, evening prayers, and the Magnificat. He supplements them with several compositions of his own invention and ends with a chant which appeals to God, Mary, the Saints, and the *Zanges*.

Sainte Marie, Mère de Dieu,	Saint Mary, Mother of God,
Priez pou les Saints-Arada.	Pray for the Zanges-Arada.
Sonnez, Agwé! Sonnez Agwé!	Ring the bell, Agwé! Ring the bell, Agwé!
Grâce, Grâce Papa Bon-Dieu!	Mercy, Mercy, God, Our Father!
Grâce les Saints, Grâce les Anges.	Saints, give us mercy. Zanges give us mercy.
Cé la vie, nous mandé!	It is life that we ask!
Grâce, tous les Zanges, l'en roche, l'en ciel, l'en la mé, l'en bois. Ainsi soit-il.	Mercy, all the Zanges, of the rocks, of the sky, of the sea, of the woods. So it is.

He makes *verver* over the food and commences to distribute it, singing all the while. The twins, Papa Legba, and the chief gods receive the first servings. These portions are placed under trees, at springs, at crossroads and other sacred places. The rest of the food is given to the participants, with those who have been most active in the ceremony getting first attention.[26] The priest eats nothing, but a generous supply of food is reserved for his household. The drummers receive the head of the goat as their reward, and the various helpers are given large portions. During the distribution of the food and the liqueurs the *houngan* chants:

[26] There are two differences between the North and the region around Mirebalais at this stage of the *service*. No gods are "sent away" and "buried" with needles with broken eyes in the North, and the family does not place food in a "small house of worship" and then wait quietly for several hours while the gods eat. In the North each family does not have a house of worship for the *Zanges*. Most *houngans* have *badjis* (*vodun* temples), and some *servants* who are not *houngans* have such houses, but they are not common. The *servants* who have these houses may hold rites for their families on Christmas, Easter, January 6th, and other days, without the presence of a *houngan*. On these occasions they put a basket of food on the altar, but neither they nor *houngans* wait for the gods to eat. See Herskovits, *op. cit.*, 167 and 176.

Délaido, jou' na corê	Délaido, when you are embarrassed
. . . . .	. . . . . .[27]
Nou mangé viande à Papa.	You have eaten Papa Legba's food.
Nou ba li zo-là pou soucer.	You give him the bones to suck.
Délaido, jou na corê!	Délaido, when you are embarrassed!

The bones of the goat are placed in a wooden bowl filled with water, and the priest's aides proceed to wash their hands in the bowl. Then the members of the family giving the ceremony come and put several coins in the bowl. After the chlidren of the family have been bathed with the greasy water, a little of it is carefully poured into a bottle, and the rest of it, with the bones, is secretly buried in the ground at the entrace to the family estate. The horns and the bones (care must be taken not to break them) are arranged in the form of a cross pointing to the four cardinal points. These precautions are necessary to prevent a new demand on the part of the gods. By seven-thirty the drumming is done half-heartedly and the crowd begins to leave. Most of the *Zanges* have departed, but a few accompany their "horses" as far as the entrances to their own homes. In concluding the *service* the priest chants.

Crâce à Bon Dié,	Thanks to God,
Crâce à les Saints,	Thanks to the Saints,
Crâce à les Zanges,	Thanks to the Zanges,
Crâce à les Morts,	Thanks to the dead,
Crâce à jumeau-yo	Thanks to the twins,
Crâce pou Mait' service,	Mercy for the master of the service,
Crâce pou Madame à li,	Mercy for his wife,
Crâce pou pilite-li,	Mercy for his children,
Crâce pou Zanges universel!	Thanks to all the Zanges!

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[27] A line seems to have been dropped from this song. It is given as I received it from my informants.

THE ABORIGINAL BOW AND ARROW OF NORTH AMERICA AND EASTERN ASIA[1]

By SPENCER L. ROGERS

PREVIOUS studies of weapon culture in the region of the Pacific have been limited to local discussions or regional surveys of either Asia or America. Syntheses of material for continental areas have been made, such as Otis T. Mason's paper, *North America Bows, Arrows and Quivers*,[2] the two papers of Bruno Adler, *Der nordasiastische Pfeil*[3] and *Die Bogen Nordasiens*,[4] and Edward S. Morse's *Ancient and Modern Methods of Arrow Release*.[5] Of these the latter alone assumes an intercontinental scope; Mason's work being in the main confined to the western hemisphere and Adler's to the eastern hemisphere. The purpose of the following analysis is to begin an intercontinental comparison between America and Asia in regard to the culture complex of archery on a broader basis than arrow release alone, as undertaken by Morse. This introductory study of the Asiatic-American comparison is mainly confined to the analysis of archery with a view to classification and distribution. The form and construction of bows and arrows and methods of arrow release are considered.

NEW AND OLD WORLD BOW TYPES

Classification of bows—The technology of bow construction offers the following possibilities:

(a) The bow may consist of a single strip of flexible material, most commonly wood.

(b) The bow may consist of two or more materials attached throughout the entire length of the stave so as to form in effect a single piece. Bows made of wood with an overlayer of sinew, bows made of layers of wood, horn and sinew or of two or more kinds of wood are in this classification.

(c) The stave may be wrapped with a tough substance such as sinew or rattan, or attached by wrappings to a sinew cable the length of the stave.

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[1] The findings of this paper were suggested by a study of the Joseph Jessop archery collection of the San Diego Museum, numbering some five thousand items. Grateful acknowledgement is here given to Dr. Edward L. Hardy, director of the San Diego Museum, for having made the collection available to the author for study.

[2] Otis Tufton Mason, *North American Bows, Arrows and Quivers* (Annual Report, Smithsonian Institution, 1893), pp. 631–679.

[3] Bruno Adler, *Der nordasiatische Pfeil, ein Beitrag zur Kenntnis der Anthropogeographie des Asiatischen Nordens* (Internationales Archiv für Ethnographie, Supplement to Band XIV, 1901), pp. 1–40.

[4] Bruno Adler, *Die Bogen Nordasiens* (Internationales Archiv für Ethnographie, Band XV, 1902), pp. 1–27.

[5] Edward S. Morse, *Ancient and Modern Methods of Arrow Release* (Bulletin of the Essex Institute, Vol. 17, Nos. 10–12, 1885), pp. 145–198.

(d) The bow may be constructed in several segments, such as those made of three or more overlapping sections of bone or horn, joined by binding or riveting.

Detailed schemes of bow classification have been worked out by Mason[6,7] Longman[8] and von Luschan.[9]

A table follows, giving the terms used in these classifications, correlated with the structural types.

NOMENCLATURE OF BOW FORMS

Structural Type	Mason (1)	Mason (2)	Longman	Von Luschan
(a)				
Single strip	Self-bow	Self-bow	Single Stave bows	einfache Stabbogen ("simple stick bow")
(b)				
Two or more materials attached for length of stave	Backed with sinew glued on	Sinew-lined bow	Composite bows with close backing of sinews	Zusammengesetzte bogen ("compound bows")
	Backed with veneer		Wooden bows made of two or more pieces	
(c)				
Wrapped	Backed bows with sinew in cable: sinew corded bows	Sinew-backed bow	Composite bows with free backing of cords or or sinews	Umwickelte Bogen ("wrapped bows")
	Backed bows with wrapped about: seized bows			Verstärkte Bogen ("reinforced bows")
(d)				
Three or more segments	Compound	Compound	Horn bows	Gestückte Bogen ("pieced together bows")

[6] Mason, *op. cit.*, p. 638.

[7] Frederick Webb Hodge, *Handbook of American Indians North of Mexico* (Bulletin, Bureau of American Ethnology, No. 30, 1907), Part 1, p. 92. Article on *Arrows, Bows and Quivers* by Mason.

[8] C. J. Longman and H. Walrond, *Archery* (London, 1894), p. 27.

[9] F. von Luschan, *Zusammengesetzte und verstärkte Bogen* (Zeitschrift für Ethnologie, Jahrgang 31, 1899), p. 239.

In an attempt to arrive at classification terms equally applicable to American and Asiatic material, the following definitions have been adopdte:

(a) *Self-Bow:* The plain wooden bow in one piece.

(b) *Composite Bow:* Bow the shaft of which embodies a laminated construction involving more than one type of material such as wood, sinew, and horn, or two woods of different property. Includes the *Sinew-Linked Bow* consisting of a strip of wood and a layer of sinew.

(c) *Backed Bow:* Bows wrapped with sinew or other tough substance in order to prevent splitting and provide greater elasticity. One form has a staff bound to a sinew cable.[10]

(d) *Compound Bow:* Bows in which the shaft is assembled from several short segments bound or riveted together.

North American Bow Types and Distribution

Mason establishes four distribution areas for North American bow types. These are geographically defined as follows:[11]

(1) *The hard-wood, self-bow area:* Includes all North America east of the Rocky Mountains and South of Hudson Bay. Extends beyond the mountains along the southern border, and is invaded by the compound bow at its north eastern extremity.

(2) *The compound bow area:* Two subdivisions: (a) The Northeastern Eskimo, (b) The Siouan.

(3) *The sinew-lined bow area:* Extends up and down the Sierras in the Western United States and British Columbia on both slopes and reaches as far north as the headwaters of the Mackenzie.

(4) *The sinew-corded bow area:* Alaska.

Following Murdoch,[12] Mason distinguishes three types in Alaska: (a) The South Alaskan types; (b) The Arctic type and (c) The Western type. These are differentiated by the method of attaching the cord backing, also size and form. "Sinew-corded" refers to bows backed by wrapping with sinew.

Longman studies the world distribution of bows and offers a map of bow types on a four-fold classification.[13] (See Map 1.)

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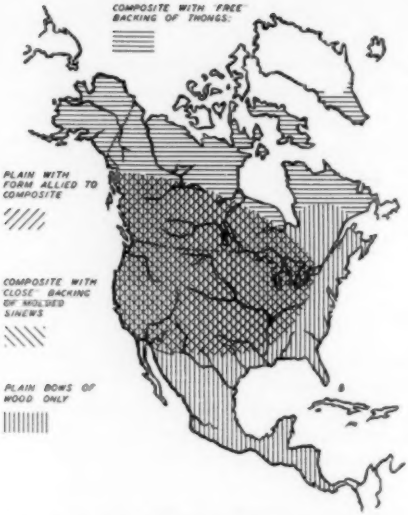
[10] The term "sinew-backed bow" is used occasionally to mean the form of composite bow referred to here as *sinew-lined*, following Mason. Thus Kroeber refers to the "sinew-backed or composite bow, first found some three to four thousand years ago in western Asia." (A. L. Kroeber, *Anthropology*, New York, 1923), p. 391.

[11] Otis T. Mason, *op. cit.*, pp. 642–644.

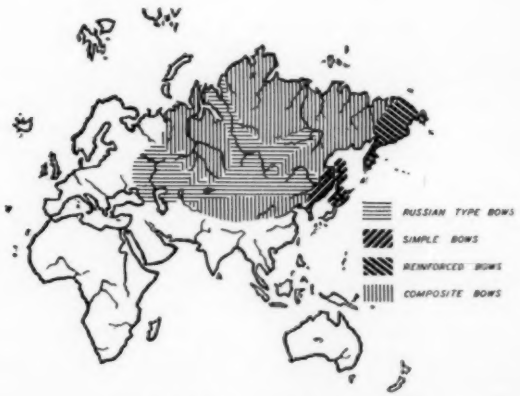
[12] John Murdoch, *A Study of the Eskimo Bows in the U. S. National Museum* (Report of the United States National Museum for 1884), pp. 307–316.

[13] Longman and Walrond, *op. cit.*, map at end.


COMPOSITE WITH FREE BACKING OF THONGS
PLAIN WITH FORM ALLIED TO COMPOSITE
COMPOSITE WITH CLOSE BACKING OF MOLDED SINEWS
PLAIN BOWS OF WOOD ONLY

MAP 1. The distribution of North American bow types (after Longman).

MAP 2. North American bow areas.



MAP 3. Asiatic bow types (after Adler).

The accompanying map (Map 2) has been prepared with Longman's distributions as a basis and with circles added to indicate the centres of the compound bow in North America.

If there is a "basic" type of North American bow, it is the plain wooden bow consisting of a single stick. The first tendency toward any refinement of the plain wooden self-bow appears to be the shaping of the staff to a flattened cross-section, leaving an area reduced in width for the grip. With this often comes a decided improvement in the contour for springiness and frequently the recurving of the horns in the cupid's bow form. This latter may have developed as an imitation of the compound bow, each half of which possessed an independent curvature.

The next degree above the self-bow is difficult to determine. The principle of sinew lining by means of shredded sinew applied to the surface of the bow back was carred out with skill and efficiency in order to make a piece of less resilient wood more suitable for use as a bow stave. Bows of the Apache, for instance, are well made with reference to the sinew lining, appearing to be one piece of wood, although the general design is crude. Greater decoration was occasionally used, as among the Hupa, who grooved the lining to simulate the bark of a tree,[14] and the Déné tribes, who used bark or snake skin to cover the sinew lining.[15] On the American continent the composite bow never exceeded in complexity the principle of laying a covering of shredded sinew over a wooden stave; whereas the composite bow in Asia assumed the elaborate forms of the Persian and Chinese types which included several layers in their construction and were elaborately recurved in form. In complication of design the sinew-backed bows of northern North America exceeded the sinew-lined. The practice of wrapping bows with hide or sinew is in its simplest form merely wrapping at the grip, and sometimes at the wings as well. This is seen scatteringly as an adjunct to the self-bow and does not identify the specimen as a true backed bow. The back form par excellence is seen among the Eskimo where the cord wrappings are applied longitudinally and transversely and with a variety of hitches; also where a sinew cable is attached by wrappings to the wooden stave. Murdoch classifies Eskimo bows in three sub-groups on the basis of their form and wrappings.[16]

A different phase of bow design is in the compound bow made of more

[14] Otis T. Mason, *The Ray Collection from Hupa Reservation* (Annual Report, Smithsonian Institution, 1886, Part I), p. 228.

[15] C. Hill-Tout, *The Native Races of the British Empire: British North America I, The Far West, The Home of the Salish and Déné* (London, 1907), p. 127.

[16] Murdoch, *op. cit.*, pp. 308–309.

than one piece of material, normally a central segment or grip section, and two limb pieces. The method of attachment may be either a simple lashing with no effort to conceal the joints, or a union neatly and imperceptibly incorporated into the construction.

Mason mentions two centers for the compound bow, the Eskimo center and the Siouan center.[17] For the Eskimoan type, Mason describes a Cumberland Gulf form in which the three elements are of reindeer antler or bone and are fitted together without concealing the joints. In the older specimens the joints are lashed but in later ones they are riveted.[18] Another type of compound bow not reported by Murdoch or by Mason is described by Stefánson for the Coronation Gulf area.[19] This is made of three pieces of wood, fitted together at V-shaped joints and backed with long cords of heavy sinew. The Siouan type consists of two pieces of horn, buffalo or sheep or deer antler, or later cow horn.[20] The splice is concealed, being carefully carefully wrapped with buckskin or flannel.

In regard to North American bow distributions, the following may be noted:

1. The wooden self-bow is the most widespread basic type.
2. The sinew-lined bow occurred in the western and north central United States and British Columbia along with the wooden self-bow.
3. The sinew-backed bow with corded reinforcements was dominant among the Eskimo of Alaska and eastward. This corded backing was given a variety of treatments, each characteristic of a general region.
4. The compound bow occurs in two areas: (a) among the eastern Eskimo and (b) among the Siouan tribes of the Plains. The two types differ considerably.

The general impression is that of increasing variety in forms as we travel from east to west and from south to north.

Asiatic Bow Types and Distributions

Adler's paper *Die Bogen Nordasiens* surveys museum material and ethnographic literature covering the region from Bering Strait southward through China and westward to European Russia. Adler classifies Asiatic

[17] Mason, *North American Bows, Arrows and Quivers*, p. 642.

[18] Boas describes both the riveting and lashing methods for the central Eskimo, illustrating lashed specimens from Pelly Bay and Victoria Land. See Franz Boas, *The Central Eskimo* (Sixth Annual Report, Bureau of American Ethnology, pp. 399–669, 1888), p. 503.

[19] Vilhjalmur Stefánsson, *The Stefánsson-Anderson Arctic Expedition of the American Museum: Preliminary Ethnological Report* (Anthropological Papers of the American Museum of Natural History, Vol. XIV, Part I, 1914), pp. 85–89, Fig. 30.

[20] Mason, *op. cit.*, p. 642.

bows under captions which may be interpreted as the categories self-bow, backed bow and composite bow employed in this paper.[21] Adler's distribution areas are shown in Map 3. Areas for the self-bow, backed bow and composite bow are indicated, as well as a region of Russian influence.

The most simple of Asiatic bow types is the straight stick bent in arc form such as among the Ainu. A simple bow of the Ostiaks and Khirghiz is of the plain self-bow construction but has the shape of the composite bow. This may be noted as a point for the revision of Longman's map which shows no distribution in Eastern Asia for the type indicated in the legend as "plain bows of form allied to those of composite bows."[22] The self-bow in Asia belongs primarily to the Ainu, the Sakhalin Gilyak, the Oroch, the Chukchi and Yakut. Its appearance among the Chukchi and Yakut is a substitution for the corded types used earlier but dropped after the introduction of trade weapons.

The most elementary method of bow reinforcement in Asia seems to have been the use of braided rings on the wooden bow by the Ainu. True backing or corded reinforcement occurs among the Chukchi, Koryak, Aleut, Namolos and especially among the Eskimo. This consists of a cord running the length of the bow back and lashed to it with thongs. A leather strip is often placed between the wrappings and the bow stick in order to protect the thongs from the sharp corners of the stick. The Eskimo bow of Murdoch's Western form is common on the Chukchi peninsula and occasionally the Arctic form is found there. Murdoch's Southern form does not occur in Asia. The Eskimo bow is confined to the most northeasterly portion of Asiatic soil. The Yakuts, Gilyaks, and their neighbors use a complex bow which has wrapping characteristic of the Eskimo backed bows. This wrapping is not a trait of the complex bow found elsewhere in Asia.

The northeastern Asiatic complex bow represents the most highly developed bow in the area under consideration. The simplest was made by gluing together two kinds of wood covered with birchbark. Sometimes a piece of sinew or canvas was included between the strips of wood. The more elaborate forms employed horn and bone with lacquer finish and silver and brass ornaments. More elaborate forms of the complex bow are found among the Yakut, Tungus, Amur-Gilyak, Khirghiz, Ostiak, Buriat, Bashkir and others. These have the form of the Turkish composite bow, *i.e.*, are strongly recurved or C-shaped when unstrung and are wide in the limbs. They are probably the result of trade with the south. The Chinese and Tartar bows represent the most intricate of Asiatic complex bows.

[21] Bruno Adler, *Die Bogen Nordasiens*, Tafel VI.

[22] Longman and Walrond, *op. cit.*, Map at end.

These involve four elements in their construction:[23] (1) The self-bow as a base, (2) The separate arms of the compound bow, (3) Sinew backing or a substitute, (4) Covering of snakeskin, bark or buckskin to conceal the joints.

Wood, horn and sinews enter into the construction, the wood acting as a stiffener at points suffering great strain, the horn being compressible and elastic and the sinews through their elasticity giving strength to the bow in its flexed portions. This form of bow is often referred to as "Tatar."

The Japanese bow is the longest form of bow developed[24] and is of the composite class, being made of two outer layers of bamboo and an inner layer of oak or mulberry, the whole being bound together with rattan withes and lacquered.

The old Russian style of composite bow was an elaborate recurved bow richly ornamented at the grip and horns.[25]

From Asiatic bow distribution the following may be noted:

1. The self-bow is confined to the more primitive tribes of the islands and coast of the eastern part of central Asia with the exception of the Chukchi and Yakut to the north who have employed them after the introduction of trade fire-arms.

2. The practice of backing the bow with sinew cords is confined to the extreme southeastern part of the continent where the two types are continuous in distribution with the northwestern American forms.

3. In the remainder of the continent the composite bow, with recurved ends and C-shaped when unstrung, is characteristic and is used, with varying detail treatments, by the Tartars, Chinese, Persians, and old Russians.

NEW AND OLD WORLD ARROWS

American arrow types.—In that feathering offers wide possibilities of variation in treatment, also because of the precedent of Adler[26] and Meyer,[27] this feature is a practical basis for discussing the varieties and distribution

[23] Otis Mason, *The Origins of Invention: A Study of Industry Among Primitive Peoples* (London, 1895), p. 385.

[24] The average length of the Japanese bow is 7 feet 5 inches for the modern form, although the older ceremonial bows were nearly 9 feet long. See Robert P. Elmer, *Archery* (Philadelphia, 1926) pp. 20–21, and Shoichi Ichikawa, *Kyu-do; "The Way of Archery" in Japan* (Natural History, Vol. XXXIII, No. 2., pp. 139–152, 1933), p. 143.

[25] See Kern's review of Anuchin's paper in Russian: H. Kern (reviewer), *D. N. Anuchin, Bows and Arrows* (Internationales Archiv für Ethographie, Band I, pp. 167–170, 1888) p. 168.

[26] Bruno Adler, *Der nordasiatische Pfeil.*

[27] Hermann Meyer, *Bows and Arrows in Central Brazil* (Annual Report, Smithsonian Institution, 1896), pp. 549–582.

of arrows. The basic type of North American arrow of the later times involved three half-feathers set radially. They are usually tied at their ends to the shaft and in addition the midrib is glued to the shaft. In some

MAP 4. Types of North American arrow feathering.

limited regions as in the Southwest the feathering is attached by a continuous sewing. Another form of feathering involves the use of whole feathers usually laid with the underside of the feather outward. These feathers may

be bound either at the upper or both ends, or the upper end may be inserted into a hole prepared in the arrow shaft. The Eskimo inserted the upper end of the feather into a hole punched in the wooden shaft and then bound the feathers at both ends. The distribution of this type is shown in Map 4. Mason considers the two whole feather type in its now limited distribution to be representative of an earlier form which was much more widespread and accordingly he considers it the basic primitive type for North America.[28]

Asiatic arrow types and distributions.—Adler gives the following eight types of Asiatic arrows with reference to the treatment of the lower end of the shaft.

(1) Feathers glued to the shaft.
(2) Feathers bound to the shaft.
(3) Feathers of which the ends are inserted into grooves in the shaft.
(4) Feathers of which the rachis is shoved into a split in the shaft so that the vanes of the feather protrude.
(5) Replacement of the feathers by leather which is nailed to the shaft.
(6) Arrows without feathering.
(7) Rudimentary feathering in which the end of the arrow usually bearing the feathers is colored to suggest feathering.
(8) Pseudo-feathering in which a suggestion of feathering is made by the carving of the wooden shaft.

Adler's map showing these types in their distributions is reproduced in substance in Map 5.

On the basis of feathering or other treatment of the lower end of the shaft Adler distinguishes five regional types of arrow for Asia.

The outstanding feature of the Asiatic arrow is the variety in form, decoration and treatment of the lower end of the shaft, whether in feathering or a substitute.

NEW AND OLD WORLD ARROW RELEASE

Classification of arrow release.[29]—Morse[30] distinguishes four forms of release:

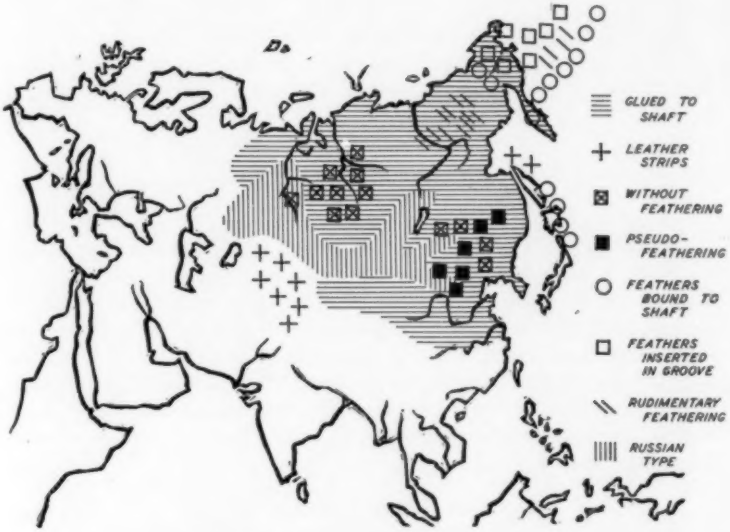
1. Primary release: Thumb and index finger pinch the arrow neck.
2. Secondary release: In addition to the primary position, the middle finger aids in pulling the string.

[28] O. T. Mason, *Amerindian Arrow Feathering* (American Anthropologist, n.s. Vol. I, No. 3, pp. 583–585, 1899), p. 584.

[29] Elmer prefers the term "draw" to arrow release, but the latter term introduced by Morse seems to be accepted by most writers. See Elmer, *op. cit.*, pp. 22–25.

[30] Edward S. Morse, *Ancient and Modern Methods of Arrow Release* (Bulletin of the Essex Institute, Vol. 17), pp. 145–198.

3. Tertiary release: The thumb and three fingers draw the string; the arrow being balanced between the thumb and the side of the index finger.
4. Mediterranean release: The arrow is held between the index and middle fingers and the string pulled by the same fingers, the thumb not being used.
5. Mongolian release: The thumb alone draws the string, usually with the aid of a ring.[31]



MAP 5. Asiatic arrow types (after Adler).

Of these forms the primary form is the weakest, while the Mediterranean has proved the strongest in comparative experiments[32] although the Mongolian method is capable of drawing powerful bows.

American forms of arrow release.—All five of the basic forms occur in America as follows:[33]

[31] For a tabular presentation of the function of the fingers and thumb in the various forms of arrow release, see A. L. Kroeber, *Arrow Release Distributions* (University of California Publications in American Archaeology and Ethnology, Vol. 23, No. 4, pp. 283–296, 1927), p. 284.

[32] A. L. Kroeber, *op. cit.*, p. 284, note.

[33] For data supplementary to that of Morse see Kroeber, *op. cit.*, and Clark Wissler, *The Relation of Nature to Man in Aboriginal America* (New York, 1926), pp. 30–40.

Primary: Northwest and Northeast.

Secondary: Southwest, Great Lakes region and Northeast.

Tertiary: Great Plains and Southwest.

Mediterranean: Eskimo regions and in extreme Southwest.

Mongolian: California; confined to one tribe, the Yahi.

Asiatic forms of arrow release.—The Asiatic distributions include all forms as follows:

Primary: Extreme south and along central coast.

The coastal peoples using this release are mostly very primitive such as the Ainu and the Vonum tribe of Formosa who are surrounded by peoples using the Mongolian form.[34]

Secondary: Reindeer Chukchi.[35]

Tertiary: India and southern Islands.

Merditerranean: Extreme north and south.

Mongolian: Central portion of continent.

Wissler points out that the continent of Asia is roughly divided into four horizontal bands, the Mongolian form of arrow release being characteristic of the central, the Mediterranean form occurring to the north and south of this, while the extreme south and scattering coastal areas are the territories of the primary, secondary, and tertiary which he groups together as "primitive."[36] Wissler further interprets this as an indication that the primitive methods were the original forms and that the Mediterranean, subsequently the Mongolian, represent overlays of later invented forms. (See Map 6.)

NEW AND OLD WORLD COMPARISONS

Bow type.—The wooden self-bow was the primitive type of both continents although its occurrence in aboriginal America prior to the discovery of firearms was more widespread than in Asia.

Bows of the sinew-backed type in both North America and Asia are confined to the northern regions.

Composite bows of the "Tatar" type were highly developed in Asia, centering in the deserts and steppes of Mongolia, becoming dominant in China, and spreading as far west as Tibet. This represents the most refined type of bow in the area under consideration.

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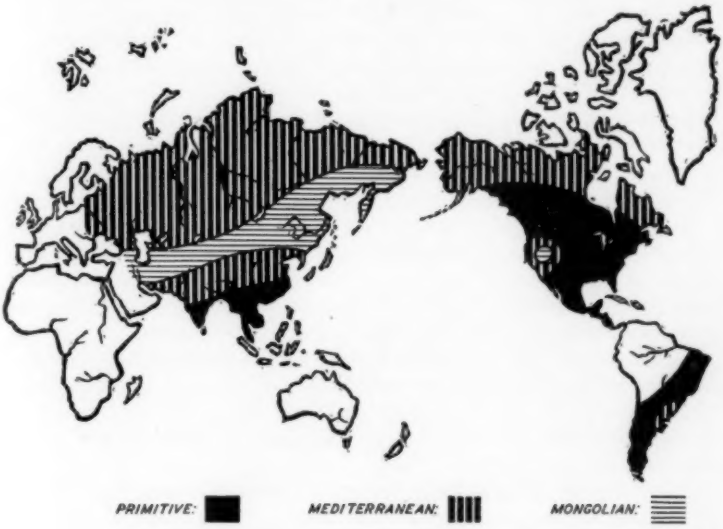
[34] Edward S. Morse, *op. cit.*, p. 14.

[35] Morse and Wissler do not show the secondary form in Asia. Bogoras, however, reports it for the Reindeer Chukchi. See W. Bogoras, *The Chukchee—Material Culture* (Memoirs of the American Museum of Natural History, Vol. IV, Part I, 1904), p. 155.

[36] Clark Wissler, *op. cit.*, pp. 30–40.

The composite form in America was confined to the compound bow made partly of horn and the sinew-lined type in which the sinew backing was moulded to the form of the bow. These forms were of limited distribution North of Mexico.

An attempt to interpret the bow distributions on the basis of the material here presented yields the following suggestions:



MAP 6. Distribution of arrow release types (after Wissler).

The self-bow is a basic form either carried by a primary diffusion wave or independently invented in several places. The other forms of bow are all attempts to improve the casting power of the bow by a combination of materials. The occurrence of the wrapped sinew-backed forms in the north of both continents is to be explained by the lack of suitable wood. The peoples of the north, being confined in their resources to driftwood which lacked much of its original resilience, were compelled to give the bow an artificial elasticity which was accomplished by the wrappings of sinew. The greatest variety of this treatment was in America rather than Asia, however, and there is accordingly internal evidence in support of American priority in the development. The sinew lined form is an attempt toward

reinforcement on a different basis, viz., that of working two materials together in construction of the bow stave itself. While this form appears in the central part of North America, the same principle is carried to a much more refined degree in the composite bows of Asia. Based on the same fundamental idea, the Asiatic composite bows involve more materials, greater perfection of design, the principle of marked recurving and other features of the "Tatar" type of bow which make it the most elaborate bow in the Asiatic-American culture provinces. The comparatively wide distribution of the composite bow in Asia, together with the slight distribution of the self-bow, as contrasted with the wider spread of the self-bow in America along with the more scattering appearance there of the lined and compound bows, elementary forms of the composite, would tend to argue for the higher development and hence probably the longer duration of bow-craft on Asiatic soil than American. When interpreting the distribution of the bow, or any other cultural element, in Asia as compared with an analogous culture element in native America, due allowance must be made for the influence of the horse on Asiatic culture. The widespread distribution of the composite bow as well as its more specific characteristics may be attributed in part to the equestrian life of the Asiatics for which there was no parallel in native American culture.

Arrow type.—The arrow in Asia shows much greater variety than in North America. On the basis of arrow feathering there are two major types in America, while in Asia there is a multiplicity of forms. This may be explained through the greater antiquity and variability of the Asiatic cultures.

Arrow release.—Arrow release offers a similar contrast. The Mediterranean and Mongolian releases are dominant in Asia whereas the Tertiary and Mediterranean are characteristic of the New World. In the interpretation of Wissler, the Primary, Secondary and Tertiary releases constitute a primitive type of shooting while the Mediterranean and Mongolian are more refined forms. The Mongolian release, which may be looked upon as a higher form in evolutionary development than the Mediterranean, is lacking in America with a single exception which is probably fortuitous. Hence we may postulate that the preponderant use of the more primitive methods of shooting in the New World indicates a less highly developed archery type.

The following synthesis of archery elements is suggested:

Primitive archery complex: Self-bow, simple arrow feathering of two whole feathers laid flat, Primary, Secondary and Tertiary arrow release.

Intermediate archery complex: Less developed forms of composite bow:

sinew-lined, sinew-backed, elementary compound; Mediterranean arrow release.

Refined archery complex: Elaborate type of composite bow; Mongolian type of arrow release.

This should not be taken to imply that bow form, arrow types and arrow release necessarily migrated simultaneously. Differential receptivity, sporadic invention, and organized diffusion may account for the lack of congruence in the distributions in Asia. In North America, where the spreading of ideas was more difficult, a greater degree of parallelism in the distributions is observable.

GENERAL CONCLUSIONS

On the basis of the foregoing we may align the facts pertaining to American aboriginal archery with a clearer perspective than is possible from the regional or purely American studies available in previous literature. It is clear that the most elaborate phase, involving the composite bow of the "Tatar" form and the Mongolian release, did not appear in a true sense in North America. Hence, postulating the Asiatic origin of New World man, we may state that if the ancestors of the American Indian brought anything with them in the way of archery, this was no more elaborate than the self-bow, the arrow with two whole feathers at the lower end, and the primary, secondary or tertiary forms of arrow release. That the crude sinew-lined bow appears in North America does not argue strongly for diffusion in that it differs markedly from anything found in Asia. The sinew backed bow in the North of America and that in the northeast of Asia are sufficiently alike to require diffusion as a most plausible explanation. Mediterranean release, occurring in the north of both continents as well as sporadically in the south, appears to have been more widespread at an earlier time and offers likelihood of diffusion from Asia to America.

We may credit the New World aborigines with probably having developed for themselves the principle of sinew lining and sinew backing of bows, and the achievement of the three split feather type of arrow. It is possible that the American Indian may have invented independently in several places the Mediterranean type of arrow release; and the Yahi achievement of the Mongolian arrow release in undoubtedly independent. In weapon culture the North American Indian shows a strong autochthonous character south of the Eskimo area where an expression peculiar to arctic peoples on both the Asiatic and American continents is noticeable. The arctic weapon complex is richer on the American side.

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NAVAHO FOODS AND COOKING METHODS[1]

By FLORA L. BAILEY

WITH a few notable exceptions, anthropologists have seldom given the detailed attention to foods and their preparation which, as Dr Audrey Richards has urged,[2] their importance demands. The subject of Navaho foods has been touched upon by several authorities. Actual recipes and directions for preparation have not been given and no survey has been made to determine the extent of individual knowledge of these and other foods. In an attempt at such a survey, twenty-five informants from three areas were questioned about their knowledge and practice of cooking. The data presented and analyzed here are limited to those furnished by women, although information was also secured from four men. Mention will be made of their knowledge later.

The informants were grouped as follows: from the Ramah, New Mexico area, seven women (82, 47, 69, 50, 58, 73, A)[3]; from the Smith Lake-Pinedale area, four women (B, C, D, E); from the Chaco Canyon area, fourteen (F to W inclusive; G, H, V, W, men). Age variation was from fourteen to over sixty years, five being over sixty; six between forty and sixty; nine between twenty and forty; and five under twenty.

The method of procedure was to make friends with the women, watch them cook, and ask as many questions regarding the various foods, their preparation and use, as seemed in keeping with the situation in each case. The first eleven informants, from the Ramah and Smith Lake-Pinedale areas, were not questioned beyond the immediate recipes they were offering. The information given was checked later with the second group of fourteen women in the Chaco Canyon area who consequently did not furnish much new material (only six of the total list of seventy-eight items). Largely because there was considerable anti-white feeling in this area at the time and the women were not inclined to talk freely, all were not questioned on the entire list of foods, although only one was questioned on fewer than twenty-nine and the average number was fifty-nine.

In the Ramah and Smith Lake-Pinedale area the number of foods learned about from individual informants varied from two to forty-six,

[1] The writer is under the greatest obligation to Dr Clyde Kluckhohn who gave instruction in field methods and directed this research. She is also deeply grateful to Dr Leland C. Wyman for instruction in recording Navaho, introductions to certain informants, identification of plants, and criticism of the manuscript; and she is indebted to Dr Donald Brand of the University of New Mexico for privileges of its field school.

[2] *Hunger and Work in a Savage Tribe* (London, 1932).

[3] The numbers are those used by Kluckhohn and Tschopik in their publications relating to this group. Informant A is from the neighboring Danoff-Two Wells area.

averaging thirteen. The informants were the more acculturated members of the community except perhaps three of the old women who recalled the use of ancient foods. In the Chaco Canyon area the percentage of affirmative answers given by each woman, indicating her acquaintance with the foods about which she was questioned, ranged from 67.7 to 100, averaging 83.8. This high percentage of affirmative answers made by women in the northern group, more closely adjacent to white culture, to recipes given by the less acculturated women in the other groups indicates that the Navaho tends to retain his food preferences in spite of white influence except in regard to those wild plants and animals which are now very scarce. Without exception, the women who had the most extensive knowledge were members of families where the man was a well known singer in the community. Perhaps their chances of contacting a large number of foods are greater, since it is at a ceremonial that the family serves a quantity of both ancient and modern dishes to the guests.[4] Foods which many of the women professed not to know are those which were evidently in use during the captivity at Fort Sumner and directly after. Such were probably not the preferences of the people at that time but those which were available when all food was scarce. One old man told that while the people were being hunted, and after they were finally set free, they had to eat anything they could lay their hands on or starve.

As other food became available the native foodstuffs and equipment became obsolescent. The women who had not heard of these practices were the younger ones, and those from families where they had no occasion to learn of them through the stories of an older relative. The following are those which were less well known: acorns, wild cherries, dried venison, blister beetle, leeching vegetables, and the use of a native wooden spoon (negative answers, indicating informant disclaimed knowledge of them, seventy-five to one hundred per cent); juniper seeds, squirrel, Orobanchaceae, Amaranthus seeds, juniper tea, storage of seeds, and the storage of roots (fifty to seventy-five per cent negative answers); slim yucca leaves, storage of corn, Ponderosa pine bark, Indian millet, and bear meat (twenty-five to fifty per cent negative answers). Others receiving a few negative replies (less than twenty-five per cent) are: mixed meat decoction, jack rabbit stew, fruit of the prickly pear cactus, Tradescantia, thin corn griddle cakes, Navaho tea, native salt, seeds of Sporobolus, Descurania, and Chenopodium, locusts, and the use of corn-stirring sticks. It will be seen that even though there were a large number of items unfamiliar to some women,

[4] Washington Matthews has noted this in *The Night Chant, A Navaho Ceremony* (Memoirs, American Museum of Natural History, Vol. 6, 1902).

almost half of these were unknown to only a few. Of the last group, the corn foods, Navaho tea, locusts, and corn-stirring sticks were things unknown to less than ten per cent of the women.

Matthews, in the Night Chant,[5] listed twenty-one ancient foods served as part of the ceremonial procedure during the vigil of the fourth night. Of these, eleven were mentioned by my informants. In addition, others mentioned by Matthews and also known to my informants were squashes, yucca, other wild fruits, wheaten cakes, mutton, and dried peaches. In the Chaco Canyon area nearly all the women knew these foods, and in the Ramah area about half of the women mentioned all of them even though not specifically questioned. Only three were mentioned by the Smith Lake-Pinedale group. The Franciscan Fathers[6] list about one hundred and twenty foods of which thirty-six were mentioned by my informants. These were twelve (of thirty-three) corn foods (nine also in Matthews' list); thirteen (of forty) wild plants, seeds, fruits or berries; eleven (of thirty-eight) meats or ways of preparing meat. Here again the Chaco Canyon women rated high in their knowledge, and the Ramah ones about the same as in their knowledge of ancient foods. Hill[7] mentions fourteen foods of which seven were known to my informants. Of the seventy-eight items given in this paper forty have not been found mentioned in the literature on the subject.

Although the Franciscan Fathers mentioned the stone griddle as a common utensil, its use seems to have disappeared in the areas studied except for making paper bread. They also say that sticks in uneven numbers (from one to eleven) are always used together for stirring corn dishes, the smaller numbers being preferred. The old women whom I questioned said that any number, from one up, may be used but that four is the preferred number. While goat meat is at present a common part of the Navaho diet, it is not given in the Franciscan's list.

Of the foods listed, certain ones seem to be preferred for every day use.

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[5] Matthews, *op. cit.* paragraphs 218 to 233 inclusive and page 107. Indicated in my list at the end of this paper by the letter M.

[6] Franciscan Fathers, *An Ethnologic Dictionary of the Navaho Language* (Saint Michaels, Arizona, 1910). Indicated in my list at the end of this paper by the letter F.

[7] W. W. Hill, *Agricultural and Hunting Methods of the Navaho Indians* (Yale University Publications in Anthropology, No. 18, 1938).

Other writers who have furnished material on Navaho foods are Francis Elmore, *Food Animals of the Navaho* (El Palacio, Vol. 44, nos. 22–24, June 1–15, 1938), E. F. Castetter, *Uncultivated Native Plants used as sources of food* (Albuquerque, 1935; *passim.*) and Gladys A. Reichard, *Social Life of the Navajo Indians* (Columbia University Contributions to Anthropology Vol. VII, Columbia University Press, New York City, 1928).

For example, of the seventeen kinds of bread, only three or four are commonly made, the tortillas, the fried and baked bread (all of wheat flour), and the green corn bread in the summer time. The corn breads are served mainly on ceremonial occasions although they may be more generally in use during the winter than in summer. There is little difference to be observed between the food used in the three areas in question. The daily diet of mutton or goat meat, coffee, wheat flour bread, and potatoes, with an occasional addition of canned or fresh fruit and vegetables is about the same in all homes. Of course the financial status of the family at the moment will influence greatly the variety, especially of store foods.

In watching several women prepare the same article at different times a certain amount of variation was observed. This was due mainly to availability of material, *i.e.* water used if milk was not handy, and vegetable fat used in preference to tallow if the women could afford it; and to some extent it varied between women who had attended school and received lessons in cooking and those who had less contact with white culture. The foods which showed no variation were the corn foods prepared with or without juniper ashes. This may have been because they are used ceremonially hence their preparation is prescribed.

COOKING EQUIPMENT AND UTENSILS

Most of the hogans observed had at least two arrangements for cooking, a stove indoors, and a fire pit outdoors. The stove is used in bad weather, or in winter, while the outdoor fire is used for most of the summer cooking. Two types of stoves were seen. One was a small, American, wood-burning stove with an oven for baking. The pipe extended through the open smoke hole in the hogan roof, or through the loose branches of the shade. The other type was of home construction, made of material from the left-overs at the trading post. It was a cylindrical, tapering arrangement of old wash tubs or oil drums, the bottoms removed, cemented together with adobe and supported on stones about a foot high. It protruded through the smoke hole. A small fire is built under it and cooking pots set around it, poked under the edge of the "stove." Often this type is set up in the summer shade as well as in the hogan. Both types are easily removed if the floor space is needed for other purposes. Sometimes there is no stove in the hogan, simply the older method of building a fire on the floor under the smoke hole.

Firewood (čiž) is almost without exception juniper unless unavailable. In that case pinyon may be used, if this also is unavailable, chamiso. Dry juniper wood (diłkiz) makes a fine fire, has a pleasant odor, gives a clear

smoke and does not blacken the pans. Pinyon makes a pitchy smoke and ruins the pots. Chamiso makes a vile odor and does not hold the heat. Usually a Navaho fire is small and compact, being started with chips and twigs, and a few larger sticks added as needed. No woman builds such a large fire that she can't get close to it when necessary.

The Spanish oven, of the beehive shape seen in pueblos, is sometimes found outside a hogan and has probably been built for use during a ceremonial. One woman stated that they are only used to cook for big crowds, such as those at Enemy Way, as they are too much trouble generally.

Additional cooking equipment usually includes storage space for dishes and food. This ranges from improvised shelves of orange crates to the most modern kitchen cabinets. There may also be a table, sometimes covered with bright oilcloth, in the more sophisticated hogans. These kitchen furnishings invariably occupy the north side of the hogan or shade, rather nearer the door than the back of the room.

Cooking utensils proper include the following: pottery jars, either Pueblo or Navaho, for cooking and serving; sometimes a basket for serving certain foods; store dishes in tin and crockery ware; knives, spoons, and forks; and one or two cast iron frying pans or Dutch ovens on three legs. Two indispensable items are the grass brooms, or brushes (bé·ʔéžó·ʔ), and the corn-stirring sticks (ʔé·désci·n), made of chamiso (dóωóži·)—Atriplex canescens (Pursh) Nutt. In one hogan seven brushes were counted, some new, some nearly worn away. They are used for hair brushes also, one end for cooking, the other for the hair. They are about a foot long and two inches in diameter at the stubby end, fanning out at the other. The stirring sticks, used for corn dishes only, are not thrown away but used over and over. In use they are held in the right hand like a pencil, fingers turned down and pointing toward the body, the pressure being against the last three fingers while stirring. After use they are leaned against the edge of the pan on the ground.

Three other utensils, now no longer in favor, were used in the old days: wooden spoons made from juniper warts (gad bise·s) and shaped with a stone knife, pottery spoons of various sizes, and spoons made from shaped gourds. Now commercial forks, knives, and spoons are used for both cooking and eating, although the preferred method is to use the more convenient fingers.

One arrangement for holding a hot dish while stirring was a strip of metal, about eighteen inches long and two inches wide, held in the left hand, one end placed against the rim of the hot container, and the other end resting on the ground, braced under the left knee while the right hand stirred the contents.

The metal griddle (céʼe·s) for baking griddle cakes is usually a sheet of metal about twenty inches square, supported over the fire by stones or empty evaporated milk cans. This and the coffee pot are the household's most frequently used articles.

Most families still possess the stone equipment, metate (čą·šžé·ʔ) or (cébenálžo·h) and mano (ča·šžíní), for grinding wheat, corn, and seeds. One woman, over sixty, owns a very old stone for grinding grass and flower seeds (γʷo·sċeʔ beˑká), size about four by three inches. Held in the right hand the grinding motion is circular rather than pulling as in grinding corn.

CUSTOMARY PRACTICES IN FOOD PREPARATION

Method of grinding corn: The corn, previously dried, is first roasted for about five minutes in a frying pan over the coals, constantly stirring to prevent burning. Then it is laid on a sheepskin, spread hide up on the ground, to cool. A metate is placed on the middle of the skin and the corn is ground three times, using a grass brush for sweeping the meal. The meal is stored in small sugar or flour sacks.

Method of grinding wheat: Wheat is dried in the sun on a canvas and ground as is corn, but four times instead of three, for it is harder to grind (82) and should make a finer flour.

Method of grinding native salt: Chunks of grayish salt are ground as is corn, but using the hand to sweep the stone, and stored in cloth sacks. One woman worked with a baby in her lap, the child learning the movement by placing her hands between her sister's on the mano and later imitating it.

Methods of measuring: Women who have attended school, or are acculturated, measure flour, milk, and the like by cups. The older and more usual method is by handfuls. Frequently the former was used only when an observer was recording the recipe. The consistency of the dough is a common guide in adding liquids. Baking powder and salt are measured by scooping some into the cupped, four fingers of the right hand, indicating the amount by an imaginary line drawn with the thumb across either the first or second joints. They seem to know by long practice what proportions should be used.

Method of Purifying Water: Water, from the storage barrels, is strained through a piece of flour sacking fastened over a wire loop on a handle. The strained water has about the same color as before, but the women seem satisfied that it is cleaner.

Method of Combining Shortening and Other Ingredients in Bread: Shortening is added to the liquid, rather than the dry ingredients of the recipe, and squeezed until it floats in small lumps. The flour is then added slowly and thoroughly mixed, kneading with the hands. Dough mixed this way

is seldom lumpy, strange to say, but "it wouldn't matter anyway for it always tastes all right" (82).

Method of Hauling Water: Water is scarce although government wells have made it more accessible in recent years. It is drawn by rope and bucket, emptied into barrels, washtubs, or other large containers covered with gunny sacking, and hauled by wagon to its customary place. Heavy barrels are more easily handled by backing the wagon into a shallow pit which brings it on a level with the ground. Hauling water and cutting firewood are men's duties but are undertaken by women when necessary.

Cleanliness: Although Navaho standards of cleanliness are not those of a New England housewife, one gets the impression that the women take a certain pride in keeping the hogan neat and clean, sweeping the ground around the cooking fire with a twig broom, washing the hands frequently, serving food graciously and tastefully, especially when guests are present, and washing the dishes in hot water at least part of the time. Sometimes they overlook the fact that the dish towel is a filthy rag, that a hair has fallen in the bread batter, that someone may have washed his hands in the drinking water, or that flies are swarming on the food. 82 stated that a corn noodle which has fallen on the floor must never be picked up and used, not indicating whether this was because of cleanliness or superstition. Meat freshly butchered is cleaned, cut in pieces, and hung in the shade over wires to keep it away from dogs and dirt. It is usually cooked thoroughly and eaten immediately, any surplus being given to the relatives and friends.

Cooperation in Cooking: The women of the household work together to prepare the meals, cheerfully and congenially, but anyone present may be drafted to help, even the men. Some men, however, will only cook if the women are sick, or there is no one else to do it. On two occasions men were observed to offer help, watching food lest it burn, when the woman was busy elsewhere. One man, from Ramah (24), was several times observed making bread when his wife was actually present. Children, both boys and girls, are expected to help by tending the fire, running errands, and washing dishes. One small boy was seen to take sole charge of watching the broiling meat, and at the same time he fried cucumbers very skillfully. Some children are taught to cook, others learn by imitation. 47 taught her daughters to cook at five, and weave at ten years of age, although she wasn't taught by her mother. 82 says children have to be taught today because they don't mind their parents. In the old days of strict obedience they learned by imitation. Male informants (G, H) learned to cook by watching, and think it quite customary for men to do so.

Food Preferences and Feeding Methods: Certain food prejudices are

widespread. Many will not eat eggs because it will make them have babies all the time, one a year, nor fish and bacon because they are not clean (82). Chickens are not eaten either, yet they are seen frequently around the hogan; perhaps they make good pets. Most of the Ramah group who keep chickens do eat eggs. They have kept chickens only about ten years.

Food preferences are individual. One woman likes corn foods, goat and sheep head, intestines, blood sausage, and sprouted wheat cake, but will not eat dried squash or yucca fruit. Her five children include in their dislikes butter, intestines, milk, candy, jam, sandwich spread, sardines, and canned meat. One girl had ceremonial restrictions placed on fish, and sheep entrails, preventing her from eating them. The first occurred because she became ill, due to her mother having seen a bloated fish while carrying her, but was cured by a ceremonial in which a fish image was made, placing, therefore, a ban on it.

In another family the father has a great fondness for chili peppers and peanut butter, while his two-year-old daughter loves canned meat above all else. Two men (G, H) sheepishly admit to a liking for locusts, baked in the coals, as do three women also (P, Q, R). The often retold story of the dislike of coffee by the old people due to the early misuse of the berries caused amusement whenever mentioned. Leeching of vegetables seems unknown to the women, although they express a preference for vegetables served without the juices as they are more palatable, especially wild potatoes and wild spinach.

Babies are nursed at the breast for several months, after which some women put them on a bottle. If a mother has no milk another woman may furnish it[8] or the baby may be put directly on a bottle of canned milk and warm water. After approximately eight months the child is fed whatever the rest of the family eats, but may still be nursed intermittently for three years. Some women, having been to school, add orange juice and canned baby food to the diet, giving no solid food for one year.

During pregnancy a woman eats carefully. 82 says she eats the same food but in smaller quantities, having lost her appetite. 73 believes fattening foods, especially milk, should be avoided as they make the baby fat. After the child is born the mother is fed corn meal mush to give her strength, and juniper tea to bring the placenta (73), (other herb decoctions are also used). Restrictions are placed on the mother for several days against meat, potatoes, beans, and bread containing either salt or baking powder. This prevents recurrence of the pains and aids in healing the baby's cord (73).

[8] *Cf.* Walter Dyk, *Son of Old Man Hat* (Harcourt, Brace, and Co. New York 1938) p. 3.

Blue corn mush or gruel will bring about unaided the recovery of an invalid.

Store foods form an important element in the diet. Flour, sugar, coffee, and potatoes are staples, with canned meat, fruit, and vegetables a luxury. Canned peaches and tomatoes are very popular, as are melons in season, although the latter are sometimes raised by the family and are not primarily store products. Sometimes an acculturated family includes crackerjack and sweets with the ancient corn cake given away at the girls puberty ceremony.

ETIQUETTE AND EATING CUSTOMS

The manner of serving guests varies with individual families. Some expect white guests to eat with the family; some serve them first, setting a special "table" on a blanket on the floor and providing adequate crockery and utensils; some never ask a white guest to have food. Generally the guests and the men are served first, the women and children eating after the others have finished. At ceremonials food is offered graciously whenever guests approach the cook-shade.

82 remarked that most people just eat bread and coffee unless there are guests, then they must have something more from the store, perhaps potatoes and fruit. Women herding sheep alone don't care how they cook because they are in a hurry, they just eat quickly (F).

It is improper for a woman to stand while cooking. She sits on the ground if outdoors, or on a bench if using a stove in the hogan. The older women say it is impolite for either a man or woman to remain standing in the hogan, though a man may occasionally do so. However, women were observed standing by an outdoor fire to tend food if other things needed attention at the same time. They bend from the waist, knees straight, and hold their full skirts back from the flames with one hand.

Members of a burial party are required to eat from separate dishes for the four days of mourning, after which time the dishes can be again used by the rest of the family.

FOLK BELIEFS AND PRACTICES CONCERNING FOODS

Care must be taken in gathering the fruit of the prickly pear cactus (hᵘoš dižo·li·) Opuntia sp. It is the same thing as (ǯé·nayogísi·) which means "twists the heart" (P). A hair must be plucked from the gatherer's head and offered the plant so that it will yield its fruit without twisting his heart. Such precautions need be taken with no other plant.

A kitten caught stealing food should have its ears pierced and threaded with small bead earrings. This prevents further stealing (47).

Left-handedness in women seems undesirable. F wonders if it is "right" to cook left-handed. It is awkward, she says, unless you do so naturally, then it may not be so bad. Sometimes men do not like to marry a left-handed woman since she looks queer, being different.

A melon is never cut by piercing with the point of a knife but is cut "around."

Eating burned foods may bring drastic results. Burned bread will give you "baked blood" and might kill you. Any burned article would react the same way, hurt your throat and make the blood come out your mouth (P, Q, R, S). You can dispose of the food by feeding it to the animals as it can not hurt them. Corn meal sprinkled over the kinalda cake while a prayer is said will prevent it burning. This is the only cake so treated (P, Q, R, S).

Corn dumplings must always be flattened in shape in the summer. If made into balls, as in winter, the hail will come, as large as the dumplings, and ruin the crops (82, 47, I). 73 says corn noodles should never be made in the summer.

A boy is never allowed to eat Blue Corn Mush from the stirring sticks (although girls may do so) as it will cause his hand to tremble while taking aim in hunting (47). This restriction is now obsolescent (I).

NAVAHO RECIPES[9]

BREADS AND CAKES

Breads Made of Corn Flour

no·gá·zá—*Thin Corn Griddle Cakes* (M, F).

Mix four or five cups of corn flour with a little baking powder and enough goat's milk and hot water (or all milk) to make a thick batter. Cook on a greased, metal sheet in cakes about six inches in diameter, turning to cook both sides about three minutes each. I uses only hot water and both baking powder and cedar ashes. M called this dish ʔabeʔ be·ne·zmosí.

nadą́·ʔ ná nes ka·dí—*Shaped Corn Griddle Cakes* (M, F).

Mix one cup juniper ashes with water and strain through a grass brush into basin of corn flour, using about three and one-half cups of the liquid. Add one-half cup clear water to this greenish dough and knead until thick. Shape with moist hands into round cakes less than an inch thick and four inches in diameter. Bake on a dry griddle, rubbing it with a cloth between bakings, and moisten cakes on both sides when done.

[9] Descriptive terms are used for foods rather than an accurate translation of Navaho names.

kíne·š bíži—*Corn Dumplings* (M, F).

Make a dough of corn flour, juniper ashes, and boiling water (to prevent breaking while cooking—82). I mixes cold water with the flour before adding the hot. Shape into patties by rotating bits of dough in a pan, flatten if desired, and drop in a pail of boiling water to cook one hour. One woman was seen rolling dumplings by hand, two at a time, into flat, circular cakes two inches by one-half inch thick, and boiling only fifteen minutes. A gruel may be made of the cooking water by adding a little dough, thinned with water. Shaped Corn Griddle Cakes can be made from the same dough.

nadą́· ʔle·sʔá·ńi[10]—*Corn Bread Baked in Ashes* (M, F).

Strain about one cup hot water mixed with juniper ashes through a grass brush into two cups blue corn flour, adding the liquid gradually and kneading with the hands to form a heavy dough. Shape into flat, oblong cakes one inch by one-half inch by five inches. Bake in the ashes for one hour. When done they will sound hollow if tapped with a stick. Brush off the ashes and wash to remove final traces before serving.

tá na·š gi·ž—*Blue Corn Mush* (M, F).

Add three-fourths cup strained cedar ashes and water to three or four cups water and boil briskly. Add four large handfuls blue corn flour and boil for thirty minutes, stirring frequently with corn-stirring sticks. Remove from fire and stir until very thick. Serve with yucca preserves in winter.

céʔesťéi·—*Paper Bread* (M, F).

A thin, corn meal batter is spread with the level palm in one stroke on a hot griddle. It is very hard to make (F).

ncidogoʔi—*Green Corn Bread* (M, F, H).

Scrape the kernels from three dozen ears of green corn and grind either on a metate or through a meat chopper. Make small packages of the mush by wrapping in two green corn husks, the first folded over and laid face down on the second. Place these boat-like packages in a hollow in the coals, cover with freshly picked squash leaves, slightly moist dirt, and hot coals. Build a quick fire over the coals and bake one hour. Eat at once, or let harden and dry in the sun, removing outer husk after first day. Store and use in winter, broken in pieces and boiled with meat or steamed and served with salt. Called in this form łe·sʔá·ńbeską (82). Sometimes baked in a Spanish oven (P), salt added (O), made daily in the autumn (I).

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[10] Shaped Corn Griddle Cakes and Green Corn Bread may also be called by this name.

Breads Made of both Corn and Wheat Flour

ʔa·lka·n—*Kinalda Cake* (M, F).

This is used in the girls puberty ceremony. Proportions given here are for a sample cake made by 58 for the author. To one-half pail boiling water add six handfuls white corn flour. Stir with corn-stirring sticks, then add one cup sprouted wheat flour (dínésą́—green wheat, placed in a sack under ground to sprout, then dried and ground on a metate) and continue stirring. Remove mush from fire and cool ten or fifteen minutes. Rub and squeeze between the palms, as if washing the hands, until all the lumps are removed (about thirty minutes). Moisten dry corn husks and tear down the ends one-half inch in five or six places. Make a cross of husks (two on the bottom and one on top) pinning firmly with a short piece of grass broom straw. Join the tips of the east and south arms of the cross with two more husks. Similarly close the other three quadrants, working sunwise (58). Add other husks thus making a mat. Rake coals out of a pit (eighteen by six inches) in which a fire burned for about four hours, brush with juniper branches and place the corn husk mat on the bottom. Lay more husks around the sides, tucking these under the mat. Pour the mush into the pit and smoothe. Sprinkle cornmeal on the surface from east to west, south to north, and around sunwise. Meal is always sprinkled on this kind of a cake "to make it holy," even a sample one (82). Cover with corn husks, then a layer of dirt, then the hot coals. Build a fire on top and bake three or four hours. Remove dirt and ashes using juniper branch and grass broom. The first piece should be cut from the center and divided into four parts, although in this instance it was cut from the northwest corner. When hot the cake is quite mushy but it hardens when cold. When made for the puberty ceremony there must be at least four big pieces, one for the singer and the others for those who helped sing (58).

łe·hi·lžo·ž—*Baked White Corn Tamales* (M, F)

Use same dough as for Kinalda Cake adding sugar, or masticated corn, uncommon now, for sweetening (F, 50). Wrap in corn husks as follows: lay out two husks end to end, butts overlapping by four inches, fold sides over the dough, then the ends, and tie in three places, crosswise, with corn husk strips. Bake in hot coals.

daʔanžiló·ʔi—*Boiled White Corn Tamales.*

Add boiling water to white corn flour and stir with corn-stirring sticks to make a thick paste. Add flour and water alternately, stirring constantly, then one cup sprouted wheat flour. Knead by squeezing and turning until

heavy dough is formed. Lay moistened corn husks in pairs, the tip of the upper husk overlapping the butt of the lower, and pointing the same way. Place mush in the center, add a third husk for the top, roll the sides of lower husks over the top, tie at each end and in the center with strips of husk, and tie on a husk handle, lengthwise. Place in boiling water and cook one-half hour. Serve hot or cold. They are sweeter and harder if allowed to cool (82).

ʔabeʔbe·ne·ʒmosí or káñhe·zką́[11]—*Milk Blue Corn Griddle Cakes.*

Place two cups milk in a pan, adding one teaspoon baking powder and one-fourth teaspoon salt. Stir in two handfuls blue corn flour and one-half cup wheat flour, to keep the cakes from cracking. Pour the thin batter on a greased griddle and bake three minutes on each side.

ƛ̓oh nadą́·ʔle·sʔá·ń—*Green Corn and Wheat Cake.*

New wheat, four inches high, is cut and ground then mixed with corn and made into cakes (not made in summer as they spoil).

Breads Made of Wheat Flour

dadíni·lɣaž—*Fried Bread.*

Combine two cups flour, one-half teaspoon salt, and one teaspoon baking powder. Add one tablespoon vegetable shortening to about one-half cup water which has been poured into a hole in the dry ingredients. Knead and squeeze the fat into the water, then into the flour, using the hands and working it into a springy dough. Taking a piece of dough the size of a tennis ball, pull and slap it back and forth between the knuckles until it forms a flat cake about ten inches in diameter and one-half inch thick. Fry in deep fat three minutes on each side, turning and removing with a fork. It will puff up making a brown, crisp bread about an inch thick. Sometimes a hole is made in the center before frying, for the grease to come through (82).

nánes ka·dí—*Wheat Tortillas* (H).

Use same dough as for fried bread, but shape by first rolling long coils of the dough, as if for pottery, and then flatten into large cakes with a wooden rolling pin on a low table, four inches high. Bake on a griddle for fifteen minutes, turning once or twice. Never made with a hole in the center (82).

kisâni·maza or kisâni· bi bá·h—*Baked Wheat Bread.*

[11] 82 said that these are wheat flour cakes made the same as corn but one-half teaspoon salt added.

Shape the dough used for fried bread into balls and place in greased muffin tins, or pat into flat ovals four inches long and lay on a baking sheet. Bake in Spanish or American oven turning when half done.

bá·h—*Yeast Bread.*

A brownish loaf resembling soda bread, baked either in a Dutch oven over coals or in a Spanish oven if quantities are being made (F). No recipe obtained.

ʔine·š bíži čosí·—*Wheat Noodle for Soup* (H).

Combine one cup flour, pinch of salt, one-third cup fat, and enough water to make a thick dough. Knead thoroughly, roll pencil sized coils between the palms, break into two inch lengths, and drop in boiling water for one-half hour. Make a soup by adding meat, or one tablespoon fat, and red pepper to season (82).

MEATS

Domesticated Animals

dibé bici·n bi bé·ž—*Boiled Mutton* (F).

Cut meat from the bones, break up the bones, add salt and boil, well covered with water, until done. Green corn may be added if desired.

ʔabé·ž—*Boiled Sheep or Goat Entrails* (F).

Heart, liver, and lungs, boiled for about three hours.

ʔałťaʔná·bé·ž—*Mixed decoction.*[12]

Sheep entrails boiled together in a pottery jar with roots and seeds of watermelon, roots and seeds of squash, and sweet corn.

dibé bici·n sikaʔasťé—*Broiled Mutton* (F).

Meat is broiled slowly, turning frequently, on a grate over the coals. Salt is added.

Ǩiži bici·n siťé—*Baked Goat's Meat.*

Meat is baked in a shallow pan in an oven, turning occasionally, for one and one-half hours.

ʔaʔči·ʔi siťé—*Baked Sheep or Goat's Head* (F).

Singe the hair from the head and place it, together with the feet, in a hole in which a fire has burned for an hour. Cover with coals, build a fire on top and bake for about four hours. When done the ashes are removed and the tongue, brains, eyes, and jaw muscles eaten. The head can be baked in an oven if desired.

[12] Kluckhohn and Wyman (in preparation) will give more complete details.

dił—*Blood Sausage* (F).

Cut a goat or sheep's throat and catch the blood in a pan. Let stand one-half hour, then squeeze and stir with the hands, discarding the lumpy parts. Add two and one-half cups diced intestines, and other meat. Mix and place in sheep's stomach, tying the holes, or tying in small bundles like sausages. Boil for two hours. It will keep a day and one-half only (82).

ʔałǩiń ʔi·lgiž—*Dried Mutton* (F).

Cut meat in thin slices, salt, and hang over wires to dry. May be stored and later served boiled, or as a soup. Venison, unlike mutton, must be pounded and soaked in hot water before eating (50). Beef, pounded and dried, is called ʔáčǫʔ (L).

Wild Animals

gah coh bi bé·ž—*Jack Rabbit Stew* (F).

Dress the rabbit and boil it with corn flour and salt. This was used by the old people (82). Meat may also be fried (P, Q, R, S).

λoziłgai—*Squirrel* (H).

The gray, long-tailed squirrel was formerly fried, or cleaned and baked in coals with the hair on. It is no longer used (50, F, G, H, P, Q, R, S).

łeʔécoh—*Pack Rat* (F).

Clean, without removing the hair, salt the meat, and bake in coals. Some say it is still used for food (I, 50), others that it is not (F, G, H). Prairie dog (λǫ́·) is prepared in the same manner, or the hair may be singed off before baking in a hole in the ground.

šaš—*Bear* (F).

Some people avoid eating this meat believing that it is not good for you (G, H, M, P, Q, R, S) and will make you too "mean." 82 and 50 say that a small piece will protect you if you don't eat too much. It was more often eaten long ago when food was scarce.

γʷone·šč̣f·di—*Locusts*.

Remove legs, wings, and head of insect. Brown the rest in the ashes and eat. It tastes like peanuts (P). Used to be eaten in the old days but now mostly by children. Used as medicine to cure stomach ache and prevent measles (M), prevent smallpox or other contageous diseases (50), and to cure sore throat by administering in a cold infusion both internally and externally together with dried Tradescantia sp., céʔéžíh—Artemisia Wrightii Gray, and tôi ká·ł—Artemisia frigida Willd. Administer twice with an interval of several hours (P).

dizé?yołyé·hi·—*Megetra vittata* (LcConte). Blister Beetle.

The only informant mentioning the blister beetle said the people used it for food in the old days. She herself never ate any (50).

CULTIVATED VEGETABLES

nómazí coh—*White Potatoes.*

Prepared in many ways: fried in vegetable fat, adding water when soft to make a mush (C), fried with onions and salt (D), boiled with goat's meat or mutton (E), fried without onions (82, 73), or baked in a Dutch or American oven (M).

nadą́·?—*Green Corn* (F, H).

Prepared in many ways: as bread (see Breads); cut from cob and boiled with goat's milk sometimes adding the fruit of ná bı·h—Conioselinum scopulorum (Gray) C. & R. (82), though I and O denied this; boiled with meat (haní·gai), sometimes with diced squashes; boiled on the cob; fried (M); and roasted, either in a pit (łe·šibé·ž) or in an oven. The roasting pit is made in the ground, five and one half feet deep and twenty inches diameter at the top, but hollowed out below so it is larger there. A fire is kept going in it all day, then removed, and the corn (two wagon loads) put in, covered with corn leaves and dirt, and roasted all night (A). Remove husks and eat at once, or dry for winter when it can be boiled in water, or ground and eaten in coffee (47).

naɣízí—*Squash* (F).

Diced, boiled in water, and served salted (ši bé·ž). Peeled, cut in thin strips and fried in mutton fat (sa na·sci·d). Quartered and baked in the oven or over an open fire (naɣíz siťé?), or baked in the ashes. Dried for the winter it may be either náhinesťą́·z—big squashes "cut around" in strips (P), or little squashes cut in long strips (šanilťá·z) (P, 50). Takes three or four days to dry as it must be taken in if it rains. After drying it is scorched briefly on the coals, then boiled as a soup adding corn flour (82).

Cucumbers.

On one occasion a woman was observed preparing cucumbers from the store by dicing and frying in deep fat in a Dutch oven. She said she had never tried cooking them before but thought she might like them that way.

WILD PLANTS

nómazí yáží—*Solanum Jamesii* Torr. (F)

Boiled unpeeled and mashed in the hands (as if kneading dough); fried, fresh, in tallow (F); cut into pieces and dried for the winter. After drying

they may be boiled into a kind of pudding (50), or ground into flour which is made into griddle cakes (with water) (I), or mixed with goat's milk to make a porridge (A). To obviate the unpleasant, sour taste (82), or to prevent poisoning (M), a bit of rhyolite tuff (λe·š) mixed with water is added in cooking wild potatoes although 82 said her children eat them raw without becoming sick.

nahó·yai—*a root resembling sweet potato* (unidentified). (F).

Root is boiled and eaten like a potato (50), principally used during the stay at Fort Sumner (F). Dried, then soaked in water and pounded on a stone it is now used to make a suds, which causes hair washed in it to grow very long. The root of čašdé·ži· (Phellopterus bulbosus (A. Nels.) (C. & R.) is also eaten, being chewed and eaten raw, or dried and used as flour (B, C).

X'oh čin—*Allium cernum Roth., var. neomexicanum* (Rydb.) Mach.

Wild onions eaten raw (82); used in soups and gravies (I); dried for the winter (I).

ki·łcini·—*probably Tradescantia spp.*

ki·łcini·łčí·—*Calochortus Gunnisonii* Wats

The entire plant is boiled and eaten like spinach (50), or baked in the coals (I, P, Q, R, S), being only used in the spring.

X'oh de·s ƙidi·ʔ—*Amaranthus retroflexus L.*

After boiling the leaves about an hour add one-half cup tallow and some salt (82). May be used like squash blossoms for flavoring; now obsolescent (I).

łe·do·le·z—*various species of Orobanchaceae.*

"Grows under a bush and looks like asparagas" (82). Baked in the ashes, obsolete (82); dried, ground, and rubbed on sores as a medicine (M).

cáʔászi ʔčó·z—*Yucca glauca* Nutt.

The leaves of the slim yucca are tied in bundles, boiled, and eaten with salt (50). Obsolete.

ńdíščí·ʔ biťáťahí—*bark of Pinus ponderosa* Laws.

In the summer the inner bark is eaten with salt (A). Obsolete (F). Obsolescent except in forested parts of the reservation (I). P, Q, R, and S said another tree (de·sbái) is similarly used.

WILD SEEDS

X'oh čó·zí—*Sporobolus cryptandrus* (Torr.) Gray. (F).

Ground and cooked before eating (F). Ground, mixed with milk and served as beverage.

X'oh de·—*various species of Chenopodium* (probably *C. leptophyllum* (Moq.) Nutt. or *C. Fremontii* Wats.) (M, F).

The seeds are threshed by heaping the plants on a sheepskin and beating them with a stick. Prepared like corn (M); ground and made into bread (82); or prepared in any of the following ways (50): baked as a cake in a pit oven in the ground, baked as a griddle cake (X'oh de· łe·s?á·ń), made into a mush, or used as flavoring in corn cakes.

?ósce? or X'osce—*Descurainia Sophia* (L.) Webb. (F).

Seeds were formerly gathered by patting the blossoms with a pottery ladle over a pottery jar (A), or in a basket. Seeds rubbed in the hands to free them from husks, ground on a stone and served by stirring in cold water as a beverage, by making into bread, or by eating the mashed pulp and drinking the juice.

ǹdeXídi—*Oryzopsis hymenoides* (Roem. and Schult.) Ricker.

A sweet grass, scarce today therefore obsolescent (A). Prepared by burning to ashes, then grinding and adding the powder to goat's milk; or by making into bread.

na·zka·di·—*various species of Amaranthus* (probably *A. blitoides* Wats.).

Seeds are threshed by the method described for *Chenopodium* and similarly prepared; ground and kneaded into dough with water then shaped in long loaves and baked in the ashes.[13] This bread (na·zká·d łe·s?á·ń) is always made in this shape (F).

diłtá·lí or gad biná·?—juniper fruit.

These are sweet like sugar (50) and were ground and eaten in mush (obsolete). P said that dika·s (unidentified) was also "sweet like šugar," but cultivated and used for candy.

ne·ščí·?—*seeds of Pinus edulis* Engelm. (F).

Roast the pinyon nuts in a frying pan until they crack. Grind carefully to break shells, and winnow in a pan. Mix with roasted dried corn and eat thus; or grind fine and mold into a small cake on the metate, dry in the sun, and keep for winter (82). "Peanut Butter" may be made by grinding the nuts (P, Q, R, S).

čéčil biná·?—*acorns* (F).

Eaten when ripe (A). Formerly ground into a mush and eaten, but never roasted (A).

[13] Mr Tschopik has noted the use of the following edible seeds for bread on the part of the people in the Ramah area: náčíšžáni—Chenopodium incanum (Wats.) Heller., X'oh de hʷoši—Amaranthus retroflexus L., X'oh de·nX'izi—Atriplex rosea L., and łe·aze—Eriogonum alatum Torr. (Identification of plants by Dr Leland C. Wyman.)

BERRIES AND FRUITS

či·lčin—*Rhus canadensis* Marsh., *var. trilobata* (Nutt.) Gray. (F).

Bark is eaten with salt (50). Berries are dried, ground, and mixed with sugar and water like jam (F, I) though in the old days no sugar was used. Bark and berries may both be ground to form a jelly (P, Q, R, S).

ǩíńžíɬʾa·hí—*Ribes inebrians* Lindl. (F).

Wild currants are generally eaten without specific preparation.

ha·šče·ʾdą́·ʾ—*Lycium Torreyi* Gray.

Fresh berries are ground on a stone, sugar added, and served as mush, sometimes adding rhyolite tuff to sweeten them (M, P, Q, R, S). 47 never heard of eating berries and meat together, or adding them with nuts to corn foods. Dried berries are boiled for one-half hour, ground, and eaten with wild potatoes (A), or made into a mush with water (82).

ndoλohí—*fruit of Yucca glauca* Nutt.

Baked in the ashes about ten minutes (82), now obsolescent (I).

ha·šgon—*fruit of Yucca baccata* Torr.

The fruit (which P calls "wild bananas") may be cooked at any time but must be ripe, with black seeds, in order to make the cake described below. In late summer it is gathered, peeled by rubbing off the outer pulp with the hands, and the seeds discarded. Bake skin and pulp over fire until very brown, stirring constantly. When it takes on the consistency of applesauce remove to another pan and cool. Grind thoroughly on a metate until very fine and sticky, then mold by teaspoonfuls on a flat board and dry for five days in the sun thus forming small, red, slightly sticky cakes. Knead these cakes into a hard dough and mold into loaves like bread, making a lengthwise hole through each loaf, dry again for five days in the sun, and store in boxes for the winter. Mixed with water and used for preserves with corn breads it is something like applesauce (82). 47 said only certain women make it, others buy from them. She learned from her mother when she was little.

hʷoš dižo li·—*fruit of Opuntia sp.* (F).

This fruit is eaten raw when ripe.

dižé coh—*Peaches* (F).

Dried and stored for winter, then boiled and eaten with corn foods (82).

dižé—*Prunus melanocarpa* (A. Nels.) Rydb. (F).

In the old days choke cherries were ground and eaten (82) because

everything was ground; ground and made into a cake which was then dried and called ńdo·ka·dí (I) or dizé náneska·dí (P, Q, R, S). P's husband, a well known singer, calls it dizé łe·s?á·ń (cherry bread) and says it is made by grinding the berries, patting them into a cake two and one-half inches in diameter, and drying it in the sun for ten days. "Any woman or young lady" (virgin?) may make it. It is used as a medicine in Mountain Top Way and Beauty Way, mixed with the mountain medicines which are given the patient, because the choke cherry is also a mountain plant.

SEASONINGS

ťá?áši·?—*native salt.*

Deposits found in the vicinity of the Navaho reservation. It has a grayish color, is ground on a metate, and does not have the strong taste of commercial salt, therefore being preferred by some because "store salt is bitter" (82).

haza?ale·—*Aulospermum purpureum* (Wats.) C. and R. (M).

Used to flavor corn foods since it "tastes like chili" (A, 50); used in soups, as is also *Chenopodium*, for flavoring; and after gathering in the spring dried and stored in paper bags for winter used (P, Q, R, S,). One informant refrains from using it as her children refuse food flavored thus.

tá?i·cóhi·—*squash blossoms.* (H).

Boiled with mutton tallow, salted, and eaten as a soup; added in large quantities to boiled meat for flavoring. They are often picked when very large, strung on wire, dried in the shade, and stored for winter when they are used to season meats and soups.

BEVERAGES

koh^{w}é·?—*coffee.* (F).

Arburkle's Ariosa coffee is most generally used. Not being thoroughly roasted its flavor makes one believe the pot must have previously been used for kerosene. Water is strained into the pot, one and one-half large spoons of coffee added, and boiled, with or without sugar. It is served with quantities of sugar, and canned milk.

dé·h—*tea.* (F).

Commercial tea is sometimes served, especially to guests. It is steeped on the leaves.

čil koh^{w}é·?—*Thelesperma gracile* (Torr.) Gray. "Navaho tea."

Gathered in small bundles (about six stalks each) which are folded into

thirds and tied with another stalk, strung on a cord and dried. May be used either fresh or dry, one bundle being placed in a pot of cold water, brought to a boil, and boiled to the desired strength. It makes a fragrant, clear, dark-amber drink.

gad—*juniper tea.*

A hot infusion of juniper twigs, given to a woman to drink (one or two cups a day for six days) directly after childbirth "to clean out the blood" (73).

Other beverages:

Refer to seeds of Descurainia, Sporobolus, and Oryzopsis.

STORAGE OF FOODS

bɨ·h bici·n—*Deer meat.*

Formerly dried, cut into small pieces, and stored in buckskin sacks in a cave (A). Now obsolete since deer is not hunted (I).

Wild potatoes.

Dried whole in the sun and stored in the hogan.

naššʒ́íži—*dry shelled corn* (H).

Stored in a round hole in the ground, lined with shredded juniper bark (ʔaží·h), covered with more bark, then a thin rock, and lastly a layer of dirt. Storage pit only known to members of the immediate family (A, 50).

Squash and Flower seeds

Stored in the same manner as corn, in a hole three and one-half feet deep and twenty inches in diameter, only known to the family (A). Stored in a sack or pan in the hogan, and sometimes buried with other foods (F).

Roots and Seeds.

Stored in an unlined hole (previously dried out with a fire) either loose or in sacks. Removed only before dawn in order to keep the storage place a secret (50).

SOUTH ORANGE, N. J.

NOTES ON HOPI BELT-WEAVING OF MOENKOPI

By KENNETH MacLEISH

THE MATERIAL for this paper was gathered at Moenkopi, the westernmost of the Hopi towns, during the summer of 1938.[1] There appears to be little doubt that this particular village stands below the level of the others in respect to weaving and other native arts. I was unable to obtain complete information as to the number of men who were practising weavers, but my estimate would be that there are no more than half a dozen who produce articles for the purpose of trading or selling. Perhaps a few others understand the particular techniques of one or two types, but it may be said of them that their attempts are few and often unsuccessful. I do not apply the term "weaver" to these men.

My informant (Q) is a man of about thirty-three with a fair command of English, a brother-in-law of the woman in whose house I was residing. He himself evinced no scruples about showing me the various weaving techniques, but his trusting attitude was not shared by the secretary of the Tribal Council, who allowed me to proceed with my study only after extracting from me the promise that I would not touch a loom or practise weaving. His explanation to me was that it had sometimes happened in the past that certain white men learned various "trade secrets" of the Hopi, and, upon going away, had patented these techniques or processes in their own names, or had in some way derived personal gain from them. The Hopis, he told me, felt that in such instances they had been bested.

The general attitude of the laymen toward the weavers, in this village, was one of mild respect and admiration. I believe that a general survey would disclose that nearly all of the young men desire (or, at least, would claim to desire) to become proficient weavers. Actually, however, few of them exert themselves sufficiently to become at all skilled along this line. I have recorded only a small amount of material on attitudes toward weavers and weaving, for the reason that I was not anxious to advertise the fact that I was being given information on the subject; but the results of my casual inquiries suggest that that is true.

In my opinion, the reason for this rather general interest in a village where all the arts are at a particularly low ebb is to be connected, to some

[1] The season's field work which made available the material for this paper was supported by grants from the Peabody Museum of Harvard University and from the Division of Anthropology of Harvard University. I wish also to express my gratitude to Mr Donald Scott, Director of the Museum, for many favors granted, and to Mr Clyde Kluckhohn, under whose direction the field work was carried out.

extent, at least, with the existence and policies of the Council, and perhaps with the "liberal"-"conservative" dichotomy. It is the endeavor of the Council to maintain native craftsmanship, and to renew lost interests in Hopi arts. The liberals are of course associated with the Council. The conservatives, however, feel that the Council is attempting to put aside all things Hopi in favor of the ways of white men. Thus it might be that the liberals are interested in weaving as a lucrative means of occupying the long winter hours, while the youths of the conservative group feel it incumbent upon them to uphold one of the dying crafts of their people. This is purely hypothetical, and I give it as a personal opinion, nothing more.

It might be of interest to consider the age and distribution of the known weavers in the light of the above. To the best of my knowledge, there is only one man among the liberals under the age of forty-five or so who knows several weaves; this is Q, my informant. Two old men in this group know how to make belts and garters, but nothing else. All of these people and a few others have learned to knit the ceremonial half-stockings.[2] I know of no young weavers in the conservative group; but there are at least two older men who are expert weavers, and a few more who weave periodically in the kivas during the winter.

I present here a list of the various types of Hopi textiles for which I was able to obtain the native words.[3] That my own list is incomplete is in itself significant, as it shows how little the average men and women of the village knew of weaving, and also how little my informant knew of types which he himself had not learned to weave.

belt (non-specific):	kʷé·wa
sash:	məcápŋóNkʷɛ·wa
Navajo or squaw belt:	tasápkʷɛ·wa
Hopi belt:	Hopíkʷɛ·wa
kilt:	pítköna
garters:	namósosoMpi
hair band:	hö'msosoMpi
shawl:	mə́capə ʔə́staŋə
woman's dress:	kanélkʷasa

[2] J. Jeancon, *Hopi Indian Weaving* (Denver Art Museum leaflet no. 18, 1931), attributes this item to white influence.

[3] For more complete lists of types, I refer the reader to the following papers:

Mary-Russell Colton, *The Arts & Crafts of the Hopi Indians* (Museum Notes, Museum of Northern Arizona, vol. 11, no. 12, 1938), pp. 1–24.

Katharine Bartlett, *How to appreciate Hopi handicrafts* (Museum Notes, Museum of Northern Arizona, vol. 9, no. 1, 1936), pp. 1–8.

Jeancon, *op. cit.*

wedding dress:	ʔó·va
wedding belt, or big belt:	wó·kòkʷe·wa
baby girl's blanket:	ʔatö′ʔö
stockings:	hóɫanàvna

The above represents the sum total of knowledge as to the various woven types on the part of some ten or twelve individuals, men and women, liberal and conservative. Every distinct blanket type, of which there are several, has a name, but I found no one who knew them. The answers to my questions on the subject were generally to the effect that the old men might know them, but that none of the young people did. Since it seemed unwise at the time to approach the old men, I was unable to complete my list of Hopi terms.

Q learned to weave at Oraibi. He said that a friend of his father's, an old man, had offered to teach him a few years before. It was then winter, so that he had time to learn, and, being very poor at the time, he was anxious to learn a trade which might bring in a little money. His interest in the traditional techniques is slight, and he weaves in what seems to him to be the most efficient manner. This helps to explain his ignorance of the innumerable Hopi terms which apply to the many aspects of weaving. It follows, therefore, that his attitude toward other and more conservative weavers is one of amused skepticism; he has more than once spoken of instances in which he has been able to show the old men better ways of working.

It is his opinion that the present-day products of the Hopi loom are superior to those of long ago, because the yarn is brighter and more attractive and the cotton thread used as invisible weft is finer and less apt to show. He felt that the native dyes[4] were too pale, and the yarn less fine and strong.

TREATMENT OF WOOL AND COTTON[5]

The wool to be used in spinning may be cut from the sheep or from sheepskins. It is not necessarily cleaned until the time comes to spin it. Raw wool is soaked overnight in water. If it is to be used later in the making of white yarn, it must be boiled for a short time in plain water. The boiling process may be put off until after the yarn has been spun; but in this case the yarn must be loosely coiled. A hard-wound ball of yarn does not so readily absorb the hot water. If the wool is boiled before spinning, which is the

[4] I was unable to get information about dyes from Q, and refer the reader to Colton, *Wool for our Indian Weavers* (Museum Notes, Museum of Northern Arizona, vol. 4, no. 12, 1932).

[5] For more detailed account of sheep and the treatment of wool, see Colton, *ibid.*

more common practice, it is spread in the sun and allowed to bleach and dry, and finally carded.[6]

Cotton was once grown in Moenkopi, but Q told me that none had been grown for some time (he did not know exactly when the practice was given up). The treatment of cotton differs only slightly from that of wool, in that a finer set of cards is used.

Carding: This process, Q said, is a recent one. In the old days twigs and thorns were sometimes used, but he was unable to tell me the exact method of procedure here. Sometimes only the hands were used in straightening the fibers; the cotton or wool was simply pulled out into a flat disk from the edge of which a flat ribbon was pulled off in a continuous spiral. The ribbon was then stretched and picked over to free it of extraneous matter.

At the present time, American cards are used, and these are handled in the customary way, i.e.: the card in the left hand is held so that it lies back across the left wrist, with the handle pointing forward, and the one in the right hand is held after the manner of a trowel, with the teeth down. Thus the teeth of the one point forward, and those of the other, backward. Wool or cotton is placed on the left card, drawn out with the right, replaced in a roll on the left, drawn out again, and so forth.

Spinning:

Materials; spindle;[7] patəʻɬa

a) whorl (of the disk type); ŋöla of plywood

b) shaft; kóho of greasewood

Long ago, yarn was at least sometimes prepared without the use of a spindle. The long ribbon, described above, was then rolled on the thigh. At the present time, the wool or cotton is taken from the cards in a thick roll, which is pulled out and evened, then tied to the spindle and spun. Q says that these are much more convenient to handle than the hand "carded" ribbon. Much of the spinning that is done starts with machine-spun yarn, the purpose being simply to render this thinner and harder. In all of the woolen belts and garters, Germantown yarn is most commonly used. In certain instances commercial yarn may be used without further spinning.

The spinning of Germantown yarn differs in no way from that of the prepared wool, except that the skeins are wound into balls and placed in a bowl on the floor so that they can unroll without tangling.

[6] W. Hough, *The Hopi Indian Collection in the U. S. National Museum* (Proceedings of National Museum, vol. 54, Washington, 1919), pp. 252–262. This author makes reference to the use of whips in the preparing of cotton. No mention of this practice was made by Q.

[7] L. Spier, *Zuni Weaving Technique* (American Anthropologist, vol. 26, 1924), pp. 64–85. Spier has noted the occurrence of an identical spindle at Zuni.

The spindle consists of a greasewood shaft some two feet long, by one third of an inch or so in thickness, slightly pointed at either end. The whorl, about three inches in diameter and a quarter of an inch thick, is fixed to the shaft some seven inches up from the lower, or spinning end.

The spinner sits with the bowl and wool on his left. He attaches the yarn or unspun length of wool to the spindle below the whorl. He sits with

FIG. 1

FIG. 2

his knees well apart, so that the upper end of the spindle rests on and at right angles to his right thigh, while the lower end is suspended in space between his legs (the spindle lies in a horizontal position). The "spinning end" is suspended from the left hand, held at about the level of the top of the head, from which the yarn to be spun descends (see fig.1).

The left hand is held with the palm out, and the thread comes up from the bowl, passes from back to front between the fourth and fifth fingers; then several turns (about five–six) are taken around all four fingers before the thread descends to the spindle-tip.

The actual process of spinning proceeds as follows: the upper, or long arm of the spindle is rolled rapidly forward along the thigh with the palm of the right hand, then retrieved, still spinning, held loosely between the thumb and middle finger This action is repeated several times, and the turns of yarn around the fingers of the left hand are dropped off one after

the other as the section of yarn being spun shortens (thrusting and retrieving; ríakìNta).

The number of thrusts is determined by the tightness of the original yarn, the desired thinness of the finished yarn, etc.

After this motion has been repeated a number of times, and the loops on the left hand have all been dropped off, the weaver places the spindle on the floor with its spinning end away from him and its long arm held under his right foot (see fig. 2). He then substitutes his right hand for his left (to hold the thread so that the tightness will stay in) and reaches out as far as he can along the unspun thread with his left hand. He grasps the thread at this point, and releases the thread with his right hand.

The purpose of this is to add about as much unspun thread between spindle and left hand as spun thread, because the length that has just been spun was given about twice as much torsion as was required; thus the spinner need not interrupt his work to start on a new section as often as he otherwise would. He may spin about six feet at a time, rather than about three.

The right hand is now used to "pass up the tightness." This consists simply in forcing the torsion up into the newly-added unspun length so that it will be even for the whole. The motion is from right to left, upwards (máwpanta).

The spun yarn is now wound around the short arm of the spindle, and a new length of unspun yarn is drawn out with the left hand, as before (winding up; tó·nanta). The winding is done with the point of the spindle rested on the belt buckle, while the shaft is spun with the fingers.

The finished yarn is rolled off the spindle into a ball (pölö'lanta).[8]

HOPI BELTS AND OTHER ITEMS WOVEN ON THE BELT LOOM

All Hopi belts, with the exception of the wedding belt, which is braided, and the ceremonial sash, which is brocade on plain cloth, are to be classed as examples of vertical tapestry weave.[9] Garters and head bands are merely miniatures, somewhat simplified, of the belt type. In the following pages, I shall describe in detail only those items in which the tapestry weave is basic, plus a brief discussion of the ceremonial sash.

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[8] Jeancon, *op. cit.* He notes the use of a corncob in rubbing and evening the yarn. I heard no mention of this, and this process was omitted by my informant, even when he spun his own yarn.

[9] Spier, *op. cit.* The types listed here as being of vertical tapestry weave are, like any typical two-bar loom product, made by what Spier calls "Tubular Weave."

THE HOPI BELT

This type is quite distinctive, at least in color and design. It is to be found in all the Hopi towns, and, according to Q, in Zuni and some of the Rio Grande Pueblos; but in these cases, its presence is to be explained by inter-tribal trade. I believe that its occurrence in towns other than those of the Hopi nation is fairly rare. This may, of course, be due to the fact that few of them are made at the present time.

In the Hopi towns themselves, with the possible exception of Hotavilla, the type is not much in evidence except on ceremonial occasions. It is generally worn with the katchina sash (though there are many exceptions to this rule), and is often worn with the black dress. The latter, however, is seldom worn at the present time outside of Hotavilla. A belt of some type is always worn with the black dress; but apparently the Navajo or Squaw belt is as readily acceptable for this purpose as is the Hopi belt.

During my stay in the village, I saw only two Hopi belts worn by women, and four Navajo belts. One of the same women wore both types (on different occasions, of course). Q told me, however, that most women owned at least one of the two types, and generally both. I was not able to check this very far, but only enough to corroborate his statement in general.

Q said that he made these and the Navajo belts for sale to other Hopis more than for any other purpose, but that sometimes he sold to the trader and still more occasionally took one or two belts to Zuni when he went to visit. He also made them as gifts to other Hopis, in return for some favor to himself. He personally preferred them to the Navajo belts, although he considers that the latter are an invention of the Hopis, and finds them more difficult to weave.

Warping (yawí?o?oya):

Materials: a six-foot length of 4×10 beam
two 2-inch dowls about three feet long (tonánkoho)
heavy stone, unshaped (may be individual peculiarity of Q's)
two holes about 2.5 in. in diameter and 2 in.
deep in wall, 8 in. above the floor. Ends of cross pieces fit into them (yawí?oyqölö)
about three balls of red yarn, two of black and of green (ball, pölö'la)

The whole warping frame (yawí?oypi) is made as follows: The heavy beam is laid edgewise on the ground, parallel to the wall of the room in

which the holes listed above have been bored. This is a modern version of of the old loom weight (or set of loom weights). On the top of the beam, groups of projecting nails are arranged at various intervals to hold the outer ends of the cross pieces. The fact that there are more than two nail-groups is due to the difference in length of the various belt-types (including garters, etc.). (See fig. 3.)

The cross pieces run to the holes in the wall from the nail groups, and the stone is tilted against the outside of the large beam to keep them firmly pressed into their receivers.

The warping frame is set up so that the cross pieces are the desired distance apart, and parallel to each other. The weaver is seated inside the frame and faces the wall, so that he can reach each of the cross pieces. He fastens the black yarn to the bar on his right (A), then passes the ball over B, under A, etc. The thread is kept quite tight during this process. The winding is done from the wall side out, and the original position of the first warp is about 8 inches out from the wall. As the warping progresses, however, the threads are pushed back nearer to the wall so as to make room for the rest. At regular intervals the threads are pressed close together with the thumbnail of the right hand.

Eighteen threads of black are put on (that is, 18 turns, so that there are two decks of warp threads).

The green thread is now tied in, so that the knot falls on the outside of A. Fourteen green warps are put on. The number of warps of each color may vary, but must of course be remembered by the weaver, since both sides of the belt are to be exactly similar.

The red is tied in next, also with the knot behind A. (18 threads.)

After the 18th red, the warps are all pushed together, and more red warps are added, this time a little distance apart. After 10 or 12 of these separated warps are put on, the red ball is tied to A with a slip knot (so that it can be untied easily) and the black thread is tied to A between 18 and 19 red. Black warps are put on between the red ones, and the weaver continues to put on black threads past the place where the red ones stop. He then ties the black thread to A and proceeds with the red, until the desired number of alternate red and black threads have been put on (in this case, 22 of each were used).

The black thread is now tied permanently (so far as warping is concerned) to A, and some solid red is put on to counterbalance that on the other side of the two-color middle section (18). Green and black follow, in the same order and number as specified above.

The finished warp-set is parallel to the floor, and about 15 inches above it (that is, to the uppermost layer of warps).

The term (yawí?oypi) applies to the warp threads as well as to the frame, there being (according to Q) no name for the threads alone, other than the simple name for string.

Heddling and arrangement of sheds (pösímrita):

Materials: several short rods of various thickness, to be used as heddles, shedsticks, etc. (These have no names until in place, aside from the generic term for sticks (kóho).)
Prong, awl-shaped and made of dogwood (mó.ci).

The whole set of threads is now compressed, so that it is about 6 inches wide, and the side threads are untied, tightened and retied, as they have become loosened as the warping progressed. When this process is completed, the weaver, now sitting behind A (fig. 4, d), takes the prong and picks the threads for the main shed; that is, he selects alternate threads all the way across, working from left to right. The prong is used and held like a pencil, and the point is moved back toward the body. This time he selects the black thread so the center strip comes up solid black. The left hand holds the picked threads, and sometimes a small stick is used for this purpose as the fingers are not long enough to reach all the way through. One of the rods is thrust through this shed, and remains there as a shedstick in the weaving proper (tələ́yi).

This done, the opposite set of threads are picked, and another stick run through; this time the reds of the center strip are brought to the surface. This shed is picked just back of the main shed stick (that is, between it and A). A cotton thread is passed through this shed; this is used with a thin rod to form the rod heddle. The string is tied to the rod at the left, then a series of loops one inch long are made with it, each clasping one of the warps of this shed. The loops are alternated with half hitches, so that they will not be too close together.

Picking; (poŋíta). Rod heddle; (pösímri).

The rod that was run through this second shed is now removed; it was used only to hold the shed while the heddle was being made.

In heddling and shedding, the weaver counts his warps before each new step, to make sure that there is no error. In this case, one was found and corrected.

This completes the warping, shedding and heddling processes, and the loom may be set up. First, however, the warps, heddle and shed stick must

be secured so that they will not be tangled when removed from the frame. This is done as follows: The heddle and shed stick are brought together in the middle of the frame and their ends are tied together, so that they cannot slide along the warps, and so that the shed stick cannot fall out of its shed (see fig. 4, b). A cloth is bound around the warps at A, and is tied to A; this will keep the threads in their proper sequence along the cross piece (see fig. 4, c).

At B, the warps are spread apart and divided into about 15 roughly equal groups (not counted off), and a rod is run through, over one and under the next. Its ends are then bound tightly to B. The purpose of this is the

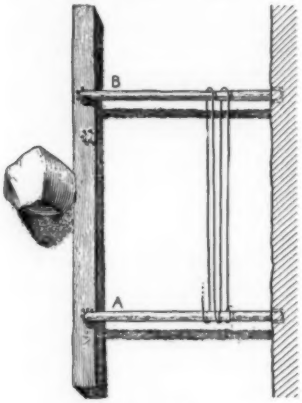

FIG. 3

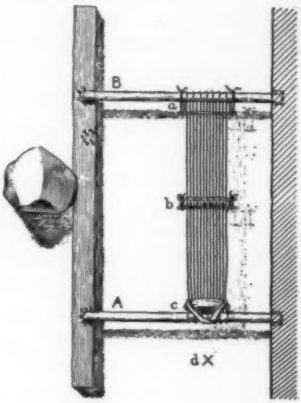

FIG. 4

same as that of the cloth, being merely to keep the threads from crossing and tangling (no name for this last as far as Q knew). (see fig. 4, a)

The cross pieces may now be taken off, and the whole warp-set rolled up and put away until the weaving is to begin.

Setting up the loom:

Materials: "weaving beam" (təlέta)
floor pieces (once loom weights) (kʷísa)
buckskin thongs
strong rope (one-half inch)
the warp-set, including A and B.

From the ceiling is suspended a heavy pole, about eight feet long and

some three or four inches thick. In this case the weaving beam was wired to and at right angles to the roof beams.

Directly below this, on the floor, is a lighter, rectangular beam with two perforations through it. It is nailed down very securely, and lies in direct line with the weaving beam above it. Originally loom weights were used, but this system takes less room and is permanent. These two fixtures may be made use of in all Hopi weaving (see fig. 5, A & B).

Beam A is attached to the floor piece (it is laid on top of it and bound tightly with leather thongs), and B is roped to the weaving beam. For this, the rope may be spiralled around B and the weaving beam, or it may be looped down to support each end of B. The rope is drawn extremely tight, and care is taken to keep B parallel with the floor and with the other beams and bars.

To make the warps still tighter, a second rod is run through under the one next to B (picking up opposite groups of threads, of course), and the thongs are drawn tight once more (see fig 5 a).[10]

The heddle and shed stick are untied from each other, and the latter is pushed about half way up the warps, the former remaining some 15 inches below it. The loom is now complete, and weaving may begin.

Weaving:

Materials: sword batten (sɔ́·kʷa)
prong (mó·ci)
shuttle (təʔí·toni)
strong black cotton thread
short lengths of stiff wire

After the warp-set has been taken off and rolled up, the shuttle is prepared. It is a simple stick, about 10 inches long by a third of an inch thick, and its ends are rounded and undifferentiated. The weft, which is black cotton thread, is wound diagonally around this stick, from one end to the other and back until all is wound on. A few turns are taken transversely around each end before starting back the other way, to keep the diagonal turns from telescoping.

The first step is the weaving in of the short lengths of wire. The first one is put into the heddle's shed, and a string is tied below it to support it. The next one is put through in the stick's shed, and battened down. Six of these are used, and they serve simply as a strong foundation for the actual weaving. These wires have no name, Q said, and are not always used.

[10] Spier, *ibid.* These short rods constitute a locking device identical with that found in Zuni belt-weaving and described by Spier.

The weft is attached to the right side of the uppermost wire, and the same alternate sheds are used with the weft passing from side to side with each change of shed (pö′ʷquanta).[11] This process makes a series of crossbars alternating black and red in the middle section (see Plate IA, a). Anywhere from three to six inches of this straight weaving may begin the belt, though it is possible to make slightly more complicated crossbars by hand picking from either shed (see Plate IA, b).

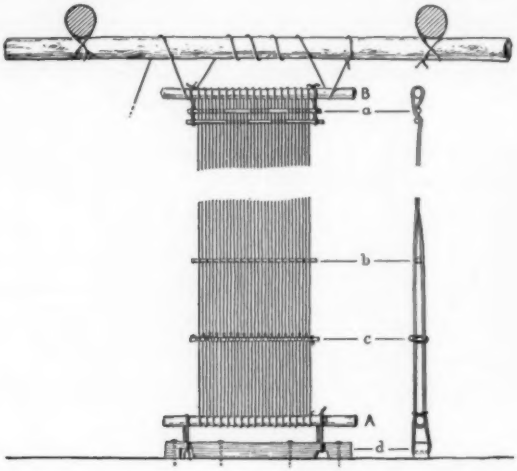

FIG. 5

After each shift of shed, the weaver runs his finger loosely over the threads once or twice, to make sure that none are crossed or tangled. Also, as the weaving progresses, he takes a rough measurement of width to make sure that he is handling his weft properly.

In this belt, there were twenty passages of the weft, two of which involved hand-picking (the rest being through the normal sheds) before the design was begun. After each passage the batten is used twice; once on the thread just passed through and once again after the shed has been changed to enclose the thread (ŋɔ́·cokinta).

The Design: Q experienced considerable difficulty in getting started on his design, and made one or two false starts. There is considerable freedom in

[11] The heddle's shed will be referred to as HS, that of the shed stick as SS.

the arranging of the design, but certain principles are held to; the whole center strip is floated (see Plate IA, c), the pattern is made up of combinations of black triangles all of the same size (with the exception of the black crossbars), and the design element or elements are bilaterally symmetrical and are repeated alternately (if there be two) from one end to the other. There may be more specific rules, but I was not able to find enough pieces for comparison to be able to state them.

In making the pattern, picking must be done from each shed each time the sheds are changed. When picking (with the fingers, always) from the set of warps brought up by the stick or heddle, whichever is in use at the time, the weaver watches his fingers and the threads; but when he picks from the far set, the warps not picked up, he watches the "weaving edge" of the cloth to see that he has taken up the right ones. When the desired threads have been picked and dropped from the shed, the batten is slipped in. It is then easy to spot any mistakes, as the threads lie smoothly on the flat surface of the latter. (Picking; (nahóykʷėromínta).)

The triangles may be joined edge to edge, or so that the edges of several form a straight diagonal line (giving a stepped effect), or so that they combine to give a larger triangular pattern. All these systems are used, sometimes in the same design unit (see Plate IA, c).

I happen to have the complete formula for the making of the two design elements involved in this example, but it would be a long and complicated affair to set it out on paper. This is particularly true since the actual form taken by the design is to some (undefined) extent a matter of individual taste. The diagrams will show the whole design, and I shall describe the making of the basic small triangle which is used in different positions over and over again.

For the purpose of explanation, we shall assume that the center strip has but ten threads, 5 red and 5 black, and that HS brings up black, and SS, red. First, HS is pulled, and the weft is passed through. Then SS is pulled, but the second and fourth red are dropped and the second and fourth black are substituted; then the weft is passed through. Thus, 1, 3 and 5 black are finished stitches, while 2 and 4 are floated. Now HS is used again, and 2, 3 and 4 black are retained, while 1 and 5 are dropped and reds are substituted. The weft is passed and the SS is pulled, but only 3 black is picked. The weft is passed, finishing 2 and 4 black, also 1 and 5 red (note that these reds, too, which form background only, have been floated; over three, under one, just as the blacks have done). Two more shed changes are necessary, but 3 black is the only thread picked, and must be floated over two more wefts.

The red threads, as I have pointed out, are floated, and no two adjacent reds start floating at the same point. There are two "sets"; every other red starts to float at one point, and their adjacents start two passages of the weft beyond.

The system of picking here is characteristic, and distinctive. Since all of it must be done by hand, without the aid of heddles, this belt is rightly felt to be one of the most difficult to make.

As the woven section rises up in front of him, the weaver may, for convenience, pull the whole warp-set around and lower the cloth to a better position. The loom is thus a two-bar type. It will be remembered, however, that in warping certain threads are *tied* to bar A. These may be cut, since the several inches of weaving which include them will hold them firmly.

The belt is finished just as it is begun, with the same number of cross-bars of alternate red and black. It is then cut off the loom, and the loose warps are allowed to coil together into about ten "ropes" (see Plate IA, d). Warps of two colors are often allowed to coil together, giving a banded effect.

THE SQUAW- OR NAVAJO-BELT

This type is more in evidence in the Hopi towns, except on ceremonial occasions, than in the Hopi belt. Many people own them, and a few women wear them. As a matter of fact, I have seen them used in the Navajo-katchina dance, and it is possible that they are used in other ceremonies though this is not the rule.

I believe that more of them are made than of the Hopi belts, because they can readily be traded to the Navajo and sometimes to the Pueblos and Zunis. They are better articles of barter than the Hopi belts, because of the Navajo demand. Also, they are sold to traders and to the local whites.

Q thought that this type was a Hopi invention, though he admitted that certain old men whom he had questioned on this score did not know. Certainly the Navajo specimens are identical as to techniques, and, so far as I could judge, in design and color distribution. Q claimed that he could tell a Navajo-woven belt from one of Hopi manufacture at a glance. However, one of his criteria was to the effect that "they're not made so good."

One point of real interest in regard to this matter is the fact that the garters (namósosoMpi) are almost miniature Navajo belts, somewhat simplified. There is no question at all but that the two are closely related and originate from the same source. Q said that there was no doubt at all as to the local origin of the latter.

Materials: the same as for the Hopi belt, but
white cotton weft

PLATE I

PLATE II

two small heddles besides H and S (wɔ́·haqniqʔə) (cáʔníqʔə) red, green and white warps only. Latter are cotton string in all of the specimens I saw (6).

Warping:

Just the same as in the above type. The warping formula is as follows: 4W, 12R, 2W, 10G, 2W, 17R. Then the alternate whites of the middle section tie in between 17 and 18. Twenty-eight R and W. Then repetition of formula for the first half, in reverse order.

The 2W on each side of the green strip is not present in most belts, and was done here as a more or less conscious elaboration, though a standard one. Of course, the formula given above is far from fixed and individual belts vary; but all remain fairly close to this standard.

Heddling and Shedding:

A shed stick and a complete rod heddle are put in, just as in the Hopi belt, taking alternate threads, one opposed to the other. The heddle is nearest A, then the shed stick (see fig. 6, c & d).

In this belt, two new heddles are put in; both are short, and take alternate reds of the center strip only. Both are on the far side (from A) of the shed stick (see fig. 6, a & b).

The reason for the presence of these heddles in this type, and for their absence in Hopi-belt weaving, is this: In the latter, the design was continuous from one end to the other, and there was more design than there was background. In this belt, the two designs succeeding each other down the length of the belt are separated by a considerable space (see Plate II, A). Also, the designs here are made up of smaller elements, and hence require more background. Thirdly, the designs here are done in straight weave, while the background is floated (in the Hopi belt, it will be remembered, design and background, i.e., the whole central strip, is floated).

The heddles, of course, simplify the floating of the red warps, thus making it easy to produce the floated background without any picking. In the Hopi belt, since the designs are continuous and the amount of background is so limited, it would not be practical to mechanize this process. Almost every passage of the weft involves the use of black and red threads, so that picking must be done, and heddles are not practicable. The warp-set is put up and tightened just as in the case of the Hopi belt.

Weaving:

Materials, same as for the Hopi belt, except as specified above. The same shuttle is used, but with white cotton thread.

Wires may be used in starting, as they were in the last example, but Q said that they were not absolutely necessary. In this case, 6 wires were used.

The first four or five inches of the belt are done in straight weave, except for two occasions on which H2 and H3 (the small heddles, H3 being above H2) were used to give the broad cross-stripes (see Plate IIA, a). No picking was done at all since the design elements were not started until four or five inches had been woven. For the straight weaving, naturally, HS and SS were used alternately.

The wires are removed as the weaving progresses, exactly as in the case of the Hopi belt.

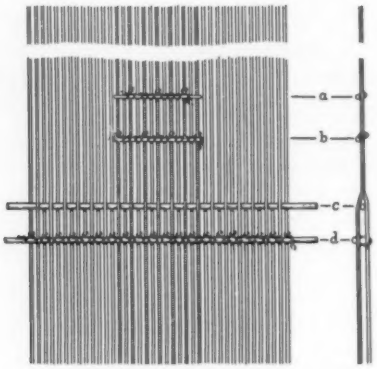

FIG. 6

The battening is done as before, except that, when H2 or H3 is used, the warps which they bring out must also be battened, thus adding one more process. For instance, the weaver might pull HS, batten that shed down, then add H2, which he would batten down in turn, then pass the weft and batten once more.

The Design:

HS picks up the white threads, and SS the red ones. H2 and H3 are always used with HS (to be called H1, hereafter, for the sake of simplicity). Thus: SS is pulled, and all the reds are brought out. Then the weft is passed through and H1 is pulled, bringing all the white threads up. It is at this point that H2 or H3 (used alternately, but always with H1) is pulled: its function is to keep every other red from passing under the weft which will

follow the drawing of H1. If they did, the effect would be of crossbars, alternating red and white as in part of the beginning section of the belt, instead of the desired floating. H2 and H3 are used purely for the purpose of maintaining a floated background without the necessity of picking. A glance at Plate IIA should be more instructive than the text in this matter.

So much for the background. As to the figures of the design, the two most important observations to be made are that there are two of them, separate and different (though this is not true of all examples of the Squaw-belt) and that each of these is symmetrical (quadrilaterally).

The type of design is not similar to that of the Hopi belt, in that triangles, while they do appear, are not basic to the patterns.

The weaver has considerable choice as to designs, so that nothing will be gained and much complexity will be added if I attempt to give the design-formula here. Instead, I shall confine myself to a brief description of the system of weaving by which the designs are produced:

All of the design is made by picking from H2 and H3, that is, by retaining only some of the red warps brought up by whichever of these is in use. Thus, the white basis shows through where certain warps from these sheds have been dropped; for these warps, had they been retained, would have covered all the white (would have been floated over it) as is the case with the general background, described above. The designs are negatively created; that is, instead of picking up threads to make the design, the weaver merely leaves a gap in the background of floated red warps, so that the white shows through. The shape of such a gap is determined by the number of warps from H2 and H3 which are discarded (allowed to drop back) or retained (as brought out by the heddle).

The two designs in this specimen can be broken down, for the purpose of discussion, into three types of elements: triangles, horizontal elements, and vertical elements (see Plate IIA, a, b, c). I shall describe the making of each.

Triangles: Let us assume that the central strip has twenty warps; that is, ten reds and ten whites. We wish to make a triangle in the center of this strip:

1) pull SS (bringing up *all* the reds), and pass the shuttle.

2) pull H1 and H2; but drop nos. 2, 3 and 4 of the 5 red warps which the latter will bring up. This will result in a horizontal white strip, 6 warps thick (6, because H2 brings up only *alternate* reds).

3) pull SS again, but drop from this the 4 red warps which correspond in position to 2, 3, 4 and 5 of the white strip which has just been made. Thus, above the strip of 6 whites, there now appears a strip of 4 whites

(N.B.: in the last case, 3 were dropped from H2 to allow 6 whites to appear, and here 4 reds must be dropped to let 4 whites appear; this is because SS picks up all the reds, and H2 (and H3) only alternate ones). These two strips fuse together, of course, being of the same color and adjacent to each other.[12]

4) pull H1 and H3, drop 2 from H3 directly over nos. 3 and 4 of the last white strip. This will leave another white strip 4 warps across.

5) pull SS, drop 3 leaves strip of white three warps across.

6) pull H1 and H2, drop 1 leaves strip of white two warps across.

7) pull SS, drop 1 lets one white show through.

The above is simplified and would give an uneven triangle, but the principles are shown and each step is represented.

Horizontal Elements: These are the simplest of all to make; to make a strip of either red or white running clear across the center strip, either H1 or SS is used (depending upon which color is desired). To limit the lateral extent of these crossbars H2 or H3 is used in conjunction with H1, and warps are dropped from these in accordance with the desired width of the white crossbar; a clear example of how the design is attained by omitting part of the background.

Vertical Elements: These are less common than either of the others, and occur, in this specimen, in design 1 only. They are made by picking two white warps (adjoining) and dropping the two corresponding red warps when SS is pulled, thus floating the two whites over three weft threads. All of them are two warps wide and three wefts long.

In this belt, there were fourteen designs; 7 of each type, so that the design at the end is not the same as the first one at the beginning. The actual ends of the belt, however, are woven identically.

In this case, as for the Hopi belt, the ends are twined into a series of "ropes," each having a small knot at its end. This belt is approximately the same length as the latter.[13]

[12] For this specimen, actually, not all of the reds in SS necessary to form the required bar of white were dropped. This was done to produce the red dots in the middle of the white triangles (see Plate IIA, a).

[13] In a general way, at least, Hopi belt-weaving is very similar to that of Zuni, as described by Spier, except that:

a) The Hopis use no specific device to hold the warps in position during the adjusting of the loom, such as the one Spier describes. This consists of two rods inserted into the sheds made by the division of the anterior warps, and tied together.

b) Spier states that only two heald rods are used; and we have seen that the Navajo belt and the garters require two short heddles as well as the two main heald rods.

Further differences would occur in the matter of the technique of creating the design, but Spier does not go into this in detail.

CEREMONIAL GARTERS

These are almost identical with the Squaw-belt as to color and techniques, though much smaller and simpler of design. Almost all men own them, though their use is entirely restricted to ceremonial occasions (says Q). Actually, they are often left out of the katchina costumes. Their purpose is to hold up the knitted half-stockings which are sometimes worn for ceremonies. I believe, though I have not been able to prove it, that more men own garters than own stockings of the above type.

The garters are often woven, because they are probably the easiest article to make of all the Hopi types, and because they can be traded to the Navajos and to other Hopis. They do not sell in the trading posts as well as belts, however, so that this fairly important means of disposal is almost lacking.[14]

Materials: Exactly the same as for the Squaw-belt.

Warping:

This is done on a shortened frame, since the pair of garters (made on one set of warps, then cut apart) do not by any means equal the length of a belt. The same types of warp-threads, the same colors and the same method of warping prevail here as in the case of the Squaw-belt.

The warping formula is: 4W, 8R, 8G, 8R. Center strip has 18R and 18W. The other side of the belt is just as described above, but in reverse order.

Heddling and Shedding:

Exactly as in the Squaw-belt.

Setting up the Loom:

As in Squaw-belt.

Weaving:

As in Squaw-belt.

Note that in this type, only one design is used (as is the case in belts of lower quality). The most noticeable distinction between this type and the last is the simplification to be seen throughout. The design is obviously related to those of the belt (compare Plate IIA with Plate IIB), and uses every element of the latter and nearly every combination; but it is certainly simplified. Furthermore, the designs are spaced not only relatively but absolutely farther apart than in the belt. Each garter is some two feet long (not including the fringe) and has only three designs.

[14] Hair bands (hö'msososMpi), no longer made at M, are very similar to these.

One more slight difference concerns the green strip down the sides: It will be noticed that in the belt, this strip is framed with white, whereas in the garter it is not. Again, however, it must be observed that the poorer belts also lack this elaboration.

In collecting data on belt-types and allied forms in third mesa, I naturally did not omit the most colorful and spectacular of them all; the ceremonial sash (məcapŋɔ́Nkʷé·wa), (Plate IB). However, the recently published[15] report of Mr. F. H. Douglas on this type is most complete, and I can add almost nothing. I find that there were some noteworthy differences between the techniques of his informant and mine in the weaving of the sash, and I shall list them briefly.

1) Douglas states that he has seen no other example of Hopi brocading than this type; and I must admit that this holds for myself as well. But my informant and his wife told me of a shirt which was brocaded (*not* embroidered), and of several foreshortened sashes which were used both as household decorations and in ceremonies; but, instead of being wound around the waist, they were suspended from the Hopi belt, which is so often worn in conjunction with it.

2) Douglas gave the width of the warp-set in the instance he observed as 8–10 inches. I recorded some 12 inches in the specimen whose manufacture I watched, and have seen others fully as wide.

3) In describing the warping, he says that the warp thread is wound continuously around the two end bars, and that the threads do not cross each other in the middle, as is the case in blanket weaving (so that the thread would pass from A over B, then over A, then over B again, unlike the warping of the types described in the preceding sections). In the warping I observed, the warps *did* intersect in the middle, as in blanket warping.

4) He states that in the weaving of the sash no shuttle is used. I found this to be true of the brocading, but my informant used a shuttle to pass the thin white weft (or tabby) back and forth.

I might add those few Hopi terms which I have recorded in describing this type:

Sash: məcapŋɔ́Nkʷé·wa
Selvaging (see Douglas' report): yá·wi
Spanner, to hold warp-set at proper width: cɔ́ŋpi

PEABODY MUSEUM
CAMBRIDGE, MASSACHUSETTS

[15] F. H. Douglas, *Notes on Hopi Brocading* (Museum Notes, Museum of Northern Arizona, vol. 11, 1938), pp. 35–38.

REPORT

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR THE YEAR ENDING DECEMBER, 1939

The American Anthropological Association held its thirty-eighth annual meeting at Judson Court, University of Chicago, Chicago, Illinois, on December 27–30, 1939. The annual meeting of the American Folklore Society and regional meetings of the Society for American Archaeology and the American Association of Physical Anthropologists were held at the same time.

COUNCIL MEETING, DECEMBER 28, 5:00 P.M.

President Diamond Jenness presided. Thirty-five members attended the meeting.

The minutes of the New York meeting, 1938, were not read, but were approved as printed in the American Anthropologist, Vol. 41, no. 2, pp. 295–307, April–June, 1939.

REPORT OF SECRETARY

During the past year, 1939, the President appointed the following committees and representatives:

Nominating Committee: A. M. Tozzer (chairman), A. L. Kroeber, J. R. Swanton.

Program Committee: W. D. Strong (chairman), G. C. Vaillant, J. M. Cooper, F. M. Setzler.

Committee on Local Arrangements: F.-C. Cole (chairman), M. J. Herskovits, P. S. Martin.

Representative to Council on Human Relations, organized by the American Association for the Advancement of Science: W. M. Krogman.

The membership of the Association as of December 1, 1939, is as follows:

Regular members

AAA members		in good standing	692	
	"	in arrears for 1939	44	736
CSB	"	in good standing	59	
	"	in arrears for 1939	18	77
AES	"	in good standing	234	
	"	in arrears for 1939	9	243
ASW	"	in good standing		45
Total membership				1101

(There are 10 Life Members included in the above figures.)

Note: The total membership for 1938 listed in the annual report is 1114. This would show a decrease in total membership for 1939 of 13. However, of the members listed in the 1938 report, 40 are listed in arrears for 1937. These, according to the regulations, should have been withdrawn from the membership list due to non-payment of dues for a period of two years.

There are 22 exchanges.

The Association has lost through death the following members: Warren King Moorehead (Founder), H. B. Alexander, T. R. Garth, Edward Sapir, and William Whitman.

Respectfully submitted,
FRANK M. SETZLER, *Secretary*

Council voted that the report of the Secretary be accepted.

REPORT OF TREASURER (1939)

The Current bank balances of the four funds of the Association appear on the books as follows:

Operating Fund	$5,364.91
Permanent Fund	6,275.73
Index Fund	1,268.65
Memoirs Fund	1,041.45
Total	$13,950.74

Of the above $11,832.08 is deposited in New York savings accounts, drawing interest; $100.00 is in the form of an interest bearing government bond; and the balance of $2,018.66 is in a checking account at the National City Bank.

The actual book surplus for the year ending November 30, 1939, amounts to $1,144.10. ($574.56 cash on hand November 30, 1938; $2,018.66 cash on hand November 30, 1939; difference $1,444.10.)

DETAILS OF OPERATING FUND

Balance on Hand—November 30, 1938 (Cash plus Savings Account)		$3,874.42
Gross Receipts		
American Anthropological Association		
1937	$ 17.40	
1938	166.80	
1939	3,493.32	
1940	457.70	$4,135.22

American Ethnological Society			
1938	$ 20.00		
1939	1,162.00		
1940	40.00	1,222.00	
Anthropological Society of Washington			
1939	$ 226.00	226.00	
Central States Branch			
1938	$ 26.00		
1939	283.00		
1940	20.00	329.00	
Reprint Series	$ 35.70	35.70	
Reimbursements (Authors' Reprints)	$ 270.22	270.22	
Sales of Publications	$ 610.65	610.65	
Interest on Savings	$ 46.39	46.39	$6,875.18
Total			$10,749.60

Gross Disbursements

American Anthropologist Account:			
Geo. Banta—Printing	$2,651.91		
Illustrations	154.24		
Distribution	205.24		
Reprints	320.35		
Storage	60.00	$3,391.74	
Editor's Account—Expense	$1,063.35	1,063.35	
*Secretary's Account—Expense	$ 236.84	236.84	
Treasurer's Account—Expense	$ 576.96		
Refund Acct.	8.00		
Reimb. Acct.	22.47		
Memb. Acct.	3.57	611.00	

* Excess due to charge made by Commodore Hotel for annual dinner December, 1938. ($60.55)

American Council of Learned Societies	$ 35.00	35.00		
Transf. Ed. & Treas Office	$ 46.76	46.76	$5,384.69	
Cash on Hand, November 30, 1939			5,364.91	$10,749.60

The following is a record of unpaid items due the Association for 1939:

†AAA 1939	$255.60	
AES 1939	45.00	
CSB 1939	90.00	
Sales	9.60	
Reimbursements (Authors' Reprints)	24.97	$425.17

† $90.00 of this amount due from foreign countries.

Details of Permanent Fund

Balance November 30, 1938 (Savings Account)	$6,086.37	
Interest to October 1, 1939	82.86	
Treasury Bond	100.00	
Interest on Bond (1938 and 1939)	6.50	$6,275.73

Details of Index Fund

Balance November 30, 1938 (Savings Account)	$1,251.40	
Interest to October 1, 1939	17.25	$1,268.65

Details of Memoirs Fund

Balance November 30, 1938 (Savings Account)	$1,027.23	
Interest to October 1, 1939	14.22	$1,041.45

Expenditures Against Budget of 1939

	Allowed	*Spent*	*Balance*
Secretary's Expenses	$ 200.00	$ 236.84	Over $36.84*
Editor's Expenses:			
Assistant	960.00	960.00	—
Office Expense	200.00	103.35	96.65

* Excess due to charge made by Commodore Hotel for annual dinner, December, 1938 ($60.55).

Treasurer's Expenses:			
Assistant	480.00	480.00	—
Office Expense	100.00	96.96	3.04
Membership Charges	25.00	3.57	21.43
American Anthropologist:			
Printing & Illustrations	3,400.00	2,806.15	593.85
Reprints	250.00	320.35	Over 70.35
Distribution	300.00	205.24	94.76
Storage & Insurance	70.00	60.00	10.00
Transfer of offices of editor and treasurer to New York	50.00	46.76	3.24
American Council of Learned Societies	35.00	35.00	—
Memoirs	800.00	—	800.00
	$6,870.00	$5,354.22	$1,622.97

Respectfully submitted,
BELLA WEITZNER, *Treasurer*

Council voted that the report of the Treasurer be accepted after submission to the Auditing Committee.

REPORT OF AUDITING COMMITTEE

The undersigned report that they have examined the Treasurer's accounts as submitted for the fiscal year 1939 and find them correct.

G. C. VAILLANT (chairman), E. C. PARSONS, W. D. STRONG

REPORT OF EDITOR

The Editor's report for 1939 must concern itself mainly with work in progress. The present Editor wishes to express his sincere gratitude to his predecessor in the office, Dr. Leslie Spier, who was kind enough to see the January issue through press and who did everything possible to make the transfer of the editorship easy. However, since neither the new Editor nor his secretary had had experience in this sort of work, the first few months had to be devoted to learning the techniques involved. The publication record is, therefore, limited to the American Anthropologist (649 pages).

Work in progress includes two Memoirs and an Index volume. The Memoirs, both of which are now in press, are No. 53, *Navajo Ceremonialism* by Wyman and Kluckhohn, and No. 54, *The Political Organization and Law-ways of the Comanche Indians* by Hoebel. The latter will also be designated "Contributions from the Laboratory of Anthropology, 4." The policy of sharing publication costs between the Association and the author has been adhered to in both these cases, making possible the publication of works of somewhat more than the usual Memoir size.

The need for an Index covering the volumes of the American Anthropologist which have appeared since the publication of the previous Index has been felt for

some time. Funds to cover its preparation and publication have been carried on the books of the Association for several years. This work is now well under way and the Index should appear during 1940.

Respectfully submitted,
RALPH LINTON, *Editor*

Council voted to accept the report of the Editor.

REPORTS OF COMMITTEES

In the absence of any members of the Nominating Committee, the President asked the Secretary to read the proposed slate submitted by the Nominating Committee. Council voted to accept the recommendations, and requested that the slate be presented to the Annual Meeting for election.

Council voted that the 80 new applications for membership in the Association be accepted.

President Jenness appointed the following members to serve as a Committee on Resolutions: J. M. Cooper (chairman), R. H. Lowie, D. Byers.

A report from the Social Science Research Council for the year 1938–39 was read by R. Linton.

Copies of the annual report of the American Council of Learned Societies were distributed to the members.

An informal report on the activities of the Division of Anthropology and Psychology of the National Research Council was presented by C. E. Guthe, chairman of the Division.

Attention was called by the President to a communication from the Department of State concerning the Eighth American Scientific Congress and the 50th Anniversary of the Pan American Union. A more detailed discussion with regard to the anthropological interest in the Congress was given by H. J. Spinden.

At the last meeting of the Council (1938) it was voted to have M. J. Herskovits and W. M. Krogman serve as a committee and to report on the possibility of inviting the International Congress of Anthropological and Ethnological Sciences to meet in the U. S. A. in 1942. M. J. Herskovits gave a detailed report on the present status of this committee and the work that had been tentatively outlined during the year. He moved that, in view of the commitments, the committee be continued and authorized to communicate to the Bureau of the International Congress an invitation to meet in the United States in 1942. During the discussion on the question numerous suggestions were made by Byers, Linton, Herskovits, and Scott. In view of this discussion Herskovits restated the motion: "I move that the American Anthropological Association authorize the appointment of a committee to extend an invitation to the Bureau of the International Congress to meet in this country in 1942 and that this committee be appointed so as to include representation of all those organizations and institutions who would be concerned with the Congress."

This motion was seconded by Byers and was passed unanimously.

President Jenness informed the Council that the incoming President will appoint

such a committee and that the committee will report at the next meeting of the Council.

The Secretary read invitations from the University of Pennsylvania, the University Museum, the Academy of Natural Sciences of Philadelphia, and the Philadelphia Anthropological Society, inviting our Association to meet in Philadelphia in 1940. Council voted to accept the invitations and voted to hold the 1940 meetings in Philadelphia, Pa.

ANNUAL MEETING, DECEMBER 29, 1:30 P.M.

President Diamond Jenness presided. Eighty-five members attended.

The Secretary was asked to read the report of the Nominating Committee. After the nominations had been presented, the following officers, Council members, and representatives to councils and associations were unanimously elected:

President, John M. Cooper
First Vice President, Elsie Clews Parsons (1940)
Second Vice President, Earnest A. Hooton (1940–1941)
Third Vice President, Wm. Duncan Strong (1940–1942)
Fourth Vice President, Ruth F. Benedict (1940–1943)
Secretary, Frank M. Setzler
Treasurer, Bella Weitzner
Editor, Ralph Linton
Associate Editors: M. J. Herskovits, F. H. H. Roberts, Jr., Melville Jacobs.
Executive Committee: R. Redfield, R. H. Lowie, R. F. Benedict.

Council

Members for term to 1943 inclusive: M. Andrade, W. R. Bascom, W. C. Bennett, G. A. Black, L. Bloomfield, P. H. Buck, R. Bunzel, D. Byers, W. B. Cline, A. M. Cooke, D. S. Davidson, H. Field, E. W. Gifford, J. P. Gillin, E. A. Golomshtok, W. D. Hambly, L. Havemeyer, H. Hoijer, M. Jacobs, F. Johnson, E. Kennard, C. R. Keyes, C. Kluckhohn, N. Knowles, L. L. Leh, T. F. McIlwraith, R. McKennan, P. S. Martin, J. A. Mason, M. Mead, A. Metraux, G. P. Murdock, P. H. Nesbitt, E. C. Parsons, O. Ricketson, H. B. Roberts, A. H. Schultz, D. Scott, F. M. Setzler, W. D. Strong, G. C. Vaillant, C. F. Voegelin, W. S. Webb, H. Webster, L. A. White, C. C. Willoughby, W. J. Wintemberg.

Members for term to 1942 inclusive: C. Amsden, K. Bartlett, H. Beyer, P. A. Brannon, J. O. Brew, G. G. Brown, K. M. Chapman, F. E. Clements, H. S. Colton, J. M. Cooper, L. S. Cressman, T. Deuel, K. P. Emory, G. Engerrand, R. Flannery, A. H. Gayton, J. P. Gillin, H. S. Gladwin, J. B. Griffin, C. E. Guthe, H. U. Hall, E. S. Handy, A. Hansen, C. L. Hay, W. W. Hill, L. W. Jenkins, I. T. Kelly, A. V. Kidder, O. LaFarge, A. Lesser, T. M. N. Lewis, J. Lips, E. Loeb, E. H. Morris, M. E. Opler, C. Osgood, H. Powdermaker, V. F. Ray, W. A. Ritchie, F. H. H. Roberts, Jr., I. Rouse, H. C. Shetrone, J. B. Stetson, S. Tax, H. Turney-High, W. L. Warner, B. Weitzner, G. Weltfish, G. D. Williams, F. R. Wulsin.

Members for term to 1941 inclusive: B. Aginsky, C. M. Arensberg, M. F. Ashley-Montagu, H. G. Barnett, R. B. Bean, H. B. Collins, Jr., B. Cummings, F. Densmore, A. C. L. Donohugh, F. H. Douglas, H. E. Driver, P. Drucker, F. Eggan, L. C. Eiseley, R. G. Fisher, W. H. Gilbert, Jr., A. Goldenweiser, C. W. M. Hart, G. G. Heye, E. A. Hoebel, E. A. Hooton, A. E. Hudson, A. R. Kelly, H. Kelly, A. Kidder, 2d, H. W. Krieger, W. M. Krogman, S. K. Lothrop, R. C. Mackaye, J. G. McAllister, T. D. McCown, W. C. McKern, H. S. Mekeel, H. Miner, M. A. Mook, H. L. Movius, Jr., P. Nash, R. L. Olson, R. Redfield, D. Rodnick, H. L. Shapiro, J. K. Shryock, V. J. Smith, F. G. Speck, L. Spier, W. S. Stallings, Jr., W. D. Wallis, L. Ward, H. N. Wardle, W. R. Wedel, R. Zingg.

Members for term to 1940 inclusive: S. A. Barrett, R. L. Beals, M. W. Beckwith, R. F. Benedict, C. W. Bishop, D. D. Brand, M. Butler, C. S. Coon, C. A. DuBois, M. M. Edel, W. N. Fenton, G. R. Fox, E. F. Greenman, E. Gunther, B. Haile, A. I. Hallowell, D. G. Haring, E. W. Haury, J. Henry, M. J. Herskovits, G. Herzog, E. B. Howard, W. W. Howells, A. E. Jenks, N. M. Judd, R. Kennedy, E. Kopta, F. de Laguna, R. Linton, D. Mandelbaum, J. C. McGregor, P. A. Means, H. P. Mera, N. Morss, J. L. Nusbaum, L. M. O'Neale, L. Outhwaite, W. Z. Park, A. C. Parker, H. Pollock, R. H. Post, J. H. Provinse, F. G. Rainey, G. Reichard, H. H. Roberts, M. J. Rogers, L. Satterthwaite, Jr., C. C. Seltzer, L. Sharp, J. H. Steward, M. W. Stirling, R. J. Terry, M. Titiev, R. Underhill, B. L. Whorf, A. Woodward.

Past Presidents (*ipso facto* members of the Council). F. Boas, F.-C. Cole, F. W. Hodge, A. Hrdlicka, D. Jenness, A. L. Kroeber, R. H. Lowie, G. G. MacCurdy, N. C. Nelson, H. J. Spinden, J. R. Swanton, A. M. Tozzer, C. Wissler.

Representative to Social Science Research Council: J. M. Cooper (1940–1942).

Representatives to National Research Council: C. E. Guthe, R. L. Olson, F. M. Setzler (1940–1943).

Representatives to Section H, A.A.A.S.: C. Osgood, C. Kluckhohn (1940).

Representative to American Documentation Institute: J. R. Swanton (1940–1943).

The Budget Committee presented the following recommendations for 1940:

1. Secretary's expenses:			
Secretary's assistant	$ 100.00		
Office expenses	100.00	$	200.00
2. Editor's expenses:			
Editor's assistant	$ 960.00		
Office expenses	200.00		1,160.00
3. Treasurer's expenses:			
Treasurer's assistant	$ 480.00		
Office expenses	125.00		
Membership charges	25.00		630.00

4. American Anthropologist:		
Printing and Illustrating	$3,400.00	
Reprints	300.00	
Distribution	300.00	
Storage, Insurance	70.00	4,070.00
5. American Council of Learned Societies		35.00
Total		$6,095.00

The Budget Committee further recommended that $500.00 from the Operating Fund be transferred to the Memoir Fund. It was voted that the budget as recommended be approved and adopted.

The following resolutions were presented by the Committee on Resolutions (Cooper, chairman, Lowie, Byers) and all were unanimously adopted:

1. *Be it resolved*, that the American Anthropological Association desires to express to the University of Chicago, Northwestern University, and Field Museum of Natural History, its deep appreciation of their hospitality and many courtesies as hosts during its annual meeting; and to the Oriental Institute for the showing of the film, *The Human Adventure*, during the same meetings.

2. *Be it resolved*, that the American Anthropological Association gratefully acknowledges the untiring and efficient services rendered by the Committee on Local Arrangements and the Program Committee.

3. *Be it resolved*, that the American Anthropological Association record its deep sense of loss in the deaths of Warren King Moorehead (a Founder), H. B. Alexander, T. R. Garth, Edward Sapir, and William Whitman; and desires to express its condolences to their surviving relatives.

4. *Be it resolved*, that the American Anthropological Association give utterance to its profound appreciation of the services of Warren King Moorehead as a Founder and an indefatigable pioneer in the field of American archaeology.

5. *Be it resolved*, that the American Anthropological Association express its appreciation of the outstanding advances due to the inspiring leadership of Edward Sapir in the field of linguistics and his services as a liaison officer among the fields of linguistics, ethnology, and psychology.

E. C. Parsons offered a motion that the President of the American Anthropological Association should appoint a committee on exchange of publications by individuals, this committee to consist of the Editors of the four anthropological journals as *ex officio* members, with a chairman appointed by the President. This committee to report at the next annual meeting. Motion was passed unanimously.

PROGRAM

WEDNESDAY, DECEMBER 27

9:00 A.M.

Council Meeting, American Folklore Society

9:30 A.M.

METHODS AND AIMS IN FOLKLORE

Chairman: E. C. PARSONS

Participants: W. R. BASCOM: "Myth, Tale, or Proverb as a Source of Information About a Given Culture"
C. KLUCKHOHN: "Mythology and Ceremonials"
M. J. HERSKOVITS: "Folklore as a Link Between Preliterate and Literate Culture"

12:00 NOON

Annual Meeting, American Folklore Society

2:00 P.M.

PRESENT STATUS OF SOCIAL ANTHROPOLOGY

Chairman: ROBERT REDFIELD

Participants: R. REDFIELD: "The Nature of Social Anthropology"
C. ARENSBERG: "Social Anthropology and the Methods of Studying a Social Group"
M. J. HERSKOVITS: "The Present Condition of Studies of Acculturation"
W. L. WARNER: "The Present Condition of Studies of the Individual in Relation to Society"
A. LESSER: "Present Status of Evolution in Social Anthropology"

THURSDAY, DECEMBER 28

9:30 A.M.

PRESENT STATUS OF NEW WORLD ETHNOLOGY

Chairman: R. H. LOWIE

Participants: R. H. LOWIE: "Some Reflections on American Culture History"
J. M. COOPER: "The Northern Algonkians and Northern Athabaskans"
J. H. STEWARD: "The Basin Area"
C. KLUCKHOHN: "A Survey of the Southwestern Indians"
E. VOEGELIN: "Problems of the Southeastern Culture Area"
F. EGGAN: "The Plains Area"
R. REDFIELD: "Problems of Central American Ethnology"
J. P. GILLIN: "Problems of the Tropical Forest Region"

12:00 NOON

Complimentary Luncheon by the University of Chicago to all members registered
A. V. KIDDER: "Andoverian Heap"

2:00 P.M.

METHOD AND THEORY IN ETHNOLOGY

Chairman: RALPH LINTON

Participants: L. A. WHITE: "The Evolutionary Approach"
B. MALINOWSKI: "The Functional Approach"
A. KARDINER: "The Psycho-analytical Approach"
G. P. MURDOCK: "Cross Cultural Survey"
G. HERZOG: "Linguistic Approaches to Cultural Study"

5:00 P.M.

Council Meeting, American Anthropological Association

8:00 P.M.

Informal Smoker

At 8:30 P.M. a showing of the film, "The Human Adventure," in the small lounge of Judson Court

FRIDAY, DECEMBER 29

9:30 A.M.

CHRONOLOGY IN THE NEW WORLD

Chairman: G. C. VAILLANT

Participants: G. C. VAILLANT: "Middle America"
W. C. BENNETT: "Peru"
S. K. LOTHROP: "Central America"
F. H. H. ROBERTS, JR.: "The Southwest"
J. A. FORD & G. WILLEY: "The Southeast"
W. A. RITCHIE: "The Northeast"
D. JENNESS: "The Eskimo"

1:30 P.M.

Annual Meeting, American Anthropological Association

2:30 P.M.

METHOD AND APPROACH IN ARCHAEOLOGY

Chairman: F.-C. COLE

Participants: J. H. STEWARD: "The Direct Historic Approach"
W. C. MCKERN: "The Taxonomic Approach"
E. W. HAURY: "Classification Problems in the Southwest"
F. M. SETZLER: "Field Methods"
C. E. GUTHE: "Scientific Cooperation in Archaeology"

7:00 P.M.

Annual Dinner

Presidential address by DIAMOND JENNESS

"Prehistoric Culture Waves Between Asia and America"

SATURDAY, DECEMBER 30

9:30 A.M.

PROBLEMS IN PHYSICAL ANTHROPOLOGY

Chairman: H. L. SHAPIRO

Participants: F. WEIDENREICH: "Ancient Man"
T. MCCOWN: "Antiquity of Man in the New World"
T. D. STEWART: "Interrelationship of Archaeology and Physical Anthropology"
W. W. HOWELLS: "The Biology of the American Indian"

(This session was held in conjunction with the American Association of Physical Anthropologists)

2:00 P.M.

THE POSITION OF LINGUISTICS

Chairman: J. A. MASON

Participants: J. A. MASON: "Liaisons between Archaeology and Linguistics"
L. BLOOMFIELD: "Linguistic Grouping and Reconstruction"
M. J. ANDRADE: "Descriptive vs. Historical Classification of Linguistic Forms"
C. F. VOEGELIN: "Correlation Between Units Postulated by Linguists and by Ethnographers"
B. L. WHORF: "Linguistic Groupings North of Mexico"
F. JOHNSON: "Linguistic Groupings of Middle America"

BOOK REVIEWS

NORTH AMERICA

Indian Arts in North America. GEORGE C. VAILLANT. (xiii, 63 pp., 96 pls. $5.00. New York and London: Harper and Brothers, 1939.)

The book has as its purpose to present pictorially a sample of the range of the arts of the North American Indians. It is a cooperative endeavor developing from the idea of Mr Réné d'Harnoncourt, General Manager of the Indian Arts and Crafts Board of the Department of the Interior, to amass a collection of photographs to illustrate the artistic attainments of these Indians. Under the general supervision of the author, Miss Phillipa Gerry selected 852 specimens from collections over the United States, which were photographed and, of these, 95 photographs were chosen by the author and a group of advisors to serve as full page plates. The text has sections on the social significance, nature, and social background of Indian arts. The origins of Indian culture are briefly reviewed and Indian art discussed in various culture areas, first on the basis of the period before white contact and then the period after white contact. Finally there is an appraisal of Indian art today and a bibliography for each section. The book obviously has been published for the general public and should arouse considerable enthusiasm.

The anthropologist will find the volume a convenient source for pictures of aboriginal art and wish they could have been multiplied. The limitations of space apparently have curtailed the range of illustrations and it is perhaps particularly regrettable that illustrations from aboriginal Mexico, Vaillant's own field of specialization, have not been included. Other notable artistic achievements which are missing are work in feathers and porcupine quills. The author makes some good points in the text, such as the contrast between the esthetic standard of symmetry in wheel-turned pottery of traditional European cultures and the asymmetrical variability of American forms. Although the text is undoubtedly not directed toward the professional, the latter may note numerous implications of an evolutionary point of view and the thesis that individualism in art is submerged in the group culture. The historical synthesis which might be hoped for from the author is only slightly developed. Neither is the analysis or appreciation of the art for its own sake avid. Vaillant undoubtedly wishes primarily to stimulate work in the neglected field of aboriginal American art and the book decidedly accomplishes this purpose.

CORNELIUS OSGOOD

YALE UNIVERSITY

St. Denis: A French-Canadian Parish. HORACE MINER. (xix, 283 pp., 12 pls. $3.00. Chicago: The University of Chicago Press, 1939.)

This praiseworthy volume describes the folk culture and social structure of a conservative rural parish in Quebec, with a preliminary historical survey and a concluding analysis of the cultural changes wrought by the impact of an urban industrial civilization. The seven hundred inhabitants of this French-Canadian com-

munity participate to some extent in the economic and political structure of the modern civilized world, but they are still sufficiently isolated to preserve in large measure the social stability and cultural homogeneity characteristic of unacculturated aboriginal peoples. In the gamut of human societies, peasant communities like St. Denis occupy a strategic middle position between the primitive and the civilized, and for this reason they are eminently worthy of study.

The book under review will inevitably be compared with other recent community surveys, and on at least one score it should rank first among them. Whereas most comparable works take the culture of the community more or less for granted, and concern themselves in the main with demographic data, statistical inductions, and the conditions to which men must adjust, the volume under consideration is a genuinely *cultural* study. Like a good ethnographic account it makes explicit the traditionally patterned norms according to which people behave and organize their interpersonal relations. This, in the opinion of the reviewer, marks a substantial advance in our descriptive sociological literature.

The economy, essentially agricultural, is adequately presented, the technology somewhat less satisfactorily. The analysis of social and political organization is outstanding. Religion and its intimate interpenetration with all other aspects of the culture are admirably portrayed, albeit with a certain Durkheimian rigidity. The life cycle of the typical individual is carefully followed from birth to death, and there is even a tantalizingly brief life history. Those who might wish for more data on the interaction of personality and culture, or for a somewhat less perfunctory analysis of recent cultural change, should remember their etiquette; after a satisfying dinner, a guest cannot gracefully ask for a second dessert.

Of especial interest to the anthropologist is the occurrence, in this transplanted European society, of a few of his old favorites: dual organization, marriage as a contract between two families, a tendency toward the levirate and sororate, etc. There are actually two intersecting sets of moieties, the one territorial in character and the other genealogical. The territorial divisions, or *rangs*, are centered on two parallel roads (called *chemins*), each studded from end to end with houses. Each house stands on an individual farm, which extends perpendicularly to the road for a mile and a half but has a very narrow frontage (the average width of a farm is only four hundred feet). A transverse road (called *route*), devoid of dwellings, unites the two *rangs* for communal purposes—government, commerce, and worship—but ordinary social intercourse flows almost exclusively along the *chemins*. The second dichotomy, non-territorial in character, separates the community into a "blue" and a "red" moiety. Although ostensibly only political parties—Conservatives and Liberals respectively—these divisions are in actuality much more. Affiliation with one or the other follows family lines almost exclusively. Antagonism between them runs high. They are rigidly exclusive as to participation in cliques and social gatherings, and even in marriage they remain strictly endogamous. They suggest an overlooked function of moiety organization—the social channeling of in-group aggression.

GEORGE PETER MURDOCK

YALE UNIVERSITY

A Reconstruction of Uto-Aztekan History. ROBERT MOWRY ZINGG. (University of Denver Contributions to Ethnography, Vol. II, 274 pp. New York: G. E. Stechert Company, 1939.)

A major task of the Americanist is to discover relationships existing between ancient cultures known only through archaeological research and modern, functioning societies seen in all their living reality. It is at this point that archaeology and ethnology cooperate most effectively, each contributing to the time-span and historical sweep of the sister discipline. Zingg's synthetic analysis of Uto-Aztekan history serves exactly this purpose, drawing as it does upon the data concerning Uto-Aztekan speaking peoples whose ethnographic range covers about 1700 miles, and adding to this a time-depth obtained through archaeological remains of Basket-Maker and Shoshonean horizons spread over 1100 miles in, roughly, the same region.

This ambitious volume is the second in a series from the University of Denver, a landmark in newer publications which promises sizable additions to anthropological knowledge. As can be seen, Zingg's contribution is a comparative study, the result of a rather thorough scrutiny of published literature on Uto-Aztekans with considerable emphasis on the archaeology of this whole vast area. As such, this work is not limited to a single culture nor to a group of peoples intimately related in all cultural aspects. While, for example, particular prominence is given to Zingg's own Tarahumara data, his reconstruction includes within its scope such various societies as the Aztekan, the Basket-Maker, the Hopi, Paiute, Ute, California Shoshoneans, and certain Sonoran groups.

It is difficult, in a brief review, to convey an impression of the wealth of material amassed to prove the thesis of this book. It is certainly not the easy and much abused space-equals-time argument in which traits are regarded as eddying out with wave-like regularity from the avowed center of a culture area. Unlike the Graebnerians, moreover, Zingg deals with actual continuous distributions which are then placed temporally by careful historical analysis, without, it must be noted, the judicious mixing of hypothetical cultures to get desired results. Wherever possible, time-depth is secured through the certain methods or archaeological dating. Where archaeology has failed to provide the answers, ready made, to questions of time sequence, the functional integration of diffused traits is treated of with considerable care and sometimes suggests the solution. An admirable caution in this regard can be seen on page 61, where certain traits, bone implements, are found to show resemblance and to suggest diffusion, but yet are widespread or generalized enough to be discounted as evidences of borrowing.

Yet in view of these cautions, in view of the impressive amount of data collected and arranged, it is surprizing that the present work does not add to our knowledge of Uto-Aztekan history more than it actually does. The continuity of culture from Basket-Maker to historic Paiute and California Shoshonean is something hitherto not unknown and generously conceded in the Loud and Harrington report on Lovelock Cave. It is regrettable that the present study, in this connection, does not incorporate a discussion of Steward's data from Promontory Point with its useful

comparisons between archaeological horizons and the modern Shoshonean. The derivation of historic Hopi from the classical Basket-Maker of the San Juan region is certainly a point to be reckoned with and the work of Haury and Hargrave in relating Pueblo IV and modern Hopi is included in the picture.

In his elaboration of the history of Uto-Aztekan cultures, Zingg posits a "Basket-Maker sub-stratum, part of which was proto-Uto-Aztekan" (p. 178). From such humble beginnings, it is said, "the culture of the Southwest developed" (p. 17). Pima-Papago, for example, are accounted for by relationships to "proto-Uto-Aztekan" rather than by a degeneration of Classical Hohokam. Concerning the Sonoran Uto-Aztekans, Zingg interprets their present day cultural diversity as further developments of "proto-Uto-Aztekan" allied to the Basket-Maker of the southwest. This latter culture was introduced into northwestern Mexico and evolved into five sub-areas: (1) Pima-Papago; (2) Sonora-Sinaloan; (3) North Sierra or Tarahumara; (4) South Sierra; (5) Tepic-Culiacan. The relationships of Nahuatlan Uto-Aztekans to the north are described as a separate development with the Sonorans seen as the intermediate link between Mexico and the southwest.

Throughout this reconstruction, certain points are well substantiated. Following Kidder's earlier suggestion that the Basket-Makers are related to Uto-Aztekans in culture, Zingg adds numerous arguments concerning the northern provenience of Uto-Aztekans in general and establishes the modern Paiute as direct survivors of Basket-Maker antecedents. The modern Hopi are traced back rather convincingly to a similar Basket-Maker substratum. In all of this, the implications of Uto-Aztekan language distribution are tested to the full, archaeological data, material culture, linguistic affiliations, and even physical anthropology contributing to the final result.

On the other hand, there are evidences of loose handling of other Shoshonean material. For example, Shivwits and Southern Ute are equated (p. 41), Moapa and Kaibab Paiutes are confused with Utes (p. 66) and in general there is no careful working out of Ute and Western Shoshonean developments separate from the vicissitudes of Paiute history.

A trivial point upon which one might base carping criticism of the book is its lack of an index. However, in a book as useful as this for the purposes of a handbook on Uto-Aztekan material culture, it is unfortunate that the volume contains no key to its detailed materials. Nevertheless, this difficulty is not insurmountable, and the specialist who wishes to make use of Zingg's extensive researches in technology will find it rewarding to arrange his own private index.

That the book lacks a convincing ring when dealing with more recent Shoshonean developments argues, of course, for more archaeological work in the Colorado-Utah region. The author has restricted his inquiry to material culture ("and material remains of social and religious culture") largely because of the utility of archaeological remains in historical reconstruction. Yet the careful analysis of cultural relationships based upon ethnological data can add significantly to archaeological materials, and the author's assumption that material culture is "more objective" than social organization and religion and therefore more com-

parable is certainly open to sharp criticism. It is not too late to remember that it was on such rocks of hard objectivity that the ship of Graebner foundered, and that the full ethnological picture also has its uses in historical reconstruction. For this reason, while advocating the need for more archaeology in the Great Basin area, we can take issue with an underlying premise of Zingg's book, that "archaeological remains . . . yield, perhaps the most satisfactory historical data at the pre-literate level" (Preface, iii). The author himself pleads for more archaeology in northern Mexico; yet his own ethnological data from this area are of more than passing importance in the total reconstruction. Perhaps the disparity between the excellence of Zingg's archaeological reconstruction and the looseness of his handling of Paiute, Ute, Shoshoni, and California Shoshonean history is a reflection of that underlying premise.

Nevertheless, this notable volume is a timely addition to the growing body of data on Uto-Aztekans. Its wide scope, its scholarly detail recommend it for every anthropological library. It appears at the time when the Great Basin, the southwestern periphery, and nearby California are revealing a record of cultural development through archaeology and ethnology that is both complex and highly important. That the present work is not complete in every detail is but a measure of the problem. Zingg has synthesized a complicated mass of material, brought order out of a certain amount of disorganized chaos, and has pointed out the problems still to be solved.

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Tabeau's Narrative of Loisel's Expedition to the Upper Missouri. Edited by ANNIE HELOISE ABEL. Trans. from the French by ROSE ABEL WRIGHT. (xi, 272 pp. $3.50. Norman: University of Oklahoma Press, 1939.)

Not so many years ago a box was found in the U. S. War Department in Washington, filled with papers belonging to the explorer Nicollet. Among them was a copy of a manuscript by Tabeau, relative to an expedition to the Upper Missouri led by Loisel about 1803–4. Later another copy was found in Montreal. The original manuscript was completed in 1805 but seems to be based upon a diary. The volume before us is the initial publication; the original in French has not been published. The narrative is interesting in style and directed to the general reader, doubtless suppressing many details in the diary which the readers of this journal would have valued, especially since for thirty years Tabeau lived among the Indians of the Upper Missouri as a trader. The information given is organized under such concepts as geographical description, fauna, Indian tribes, and finally ethnology.

Most of the ethnology in the narrative refers to the Arikara, but Tabeau has much to say about the Mandan, Cheyenne, Ponca, Sioux, and Comanche. One notes little in the way of new information, but the close correspondence between the statements of Tabeau and those in the field notes of ethnologists testifies to his reliability. A few random citations are all we can attempt here: thus the abandon-

ment of agriculture by the Cheyenne is stated. The comparative comments upon the trading, fighting etc. of the various tribes are worthy of note; the author's exposure of some crude tricks of medicine men and his account of some others so skillful that he could not explain them, adds something of importance to the understanding of this difficult subject; there is a full description of a fashionably dressed man, etc.

There are unusual statements as to personal habits, such as nude men playing ball in winter temperature at 26° below zero, two hundred people eating an equal number of buffalo in four days, the intimacy of the mother-in-law and the son-in-law, the vileness and brutality of some Indian customs, that of twenty expeditions to war more than fifteen are abandoned at the outset, etc.

Under the caption *Ceremonies* are objective descriptions of marriage, the feast over the first bird killed by a boy, the selection of soldiers, the mourning ceremony, piercing children's ears, blessing the grain. The reader familiar with the ethnology of the Plains will recognize most of the procedures described as common to other tribes, which is further proof of the reliability of this observer.

We pass over much interesting historical information to call attention to Tabeau's keen appreciation of local environmental conditions as limiting the activities of the Indian. His statement of the dependence of the Indian upon the buffalo cannot be improved. The Arikara must move their villages every five to six years, because the wood supply is exhausted, whereas the Mandan were in a locality where wood was more abundant; the relation of this to the power of the Mandan and Hidatsa is suggestive; between the frequent failures of the maize crop and the drifting away of the bison, famine was far from unusual; fish were rare in the Upper Missouri and so of little food value; a good account of the sparse food flora is given; again the bird fauna of the country is almost negative in food value; finally, the everlasting fighting and mutual suspicion among the Indians prevented any kind of growth in nationalism.

The difficulties of the trader in the plains are discussed as partly due to the fact that the buffalo supplied all the Indian needed in the way of implements, materials and food. Little that the trader had to offer tempted the Indians to change their way of life and in turn they had little to offer the trader except buffalo hides and pemmican.

As an illustration of Tabeau's style we quote:

> All that one can say is that, if these barbarians leave no doubt that they are human, intelligent beings, it is because they have the form, the face, and the faculty of speech of human beings. Stupid, superstitious, gluttonous, lewd, vindictive, patient by principle, fierce of temper, cowardly with men of like strength, fearless in assassinations, ungrateful, traitorous, barbarous, cruel, lying, thievish, etc. I add the and so forth in the fear these epithets do not wholly comprise their vices and that I may be free to add to them. That is, it seems to me, a beautiful national character, in which I believe that the facts already related and those to follow ought to prove sufficiently that nothing is exaggerated.

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AMERICAN MUSEUM OF NATURAL HISTORY

The Long Journey to the Country of the Hurons, by FATHER GABRIEL SAGARD. Edited with Introduction and Notes by George M. Wrong. Translated into English by H. H. Langton. (The Publications of the Champlain Society, XXV, 411 pp., 6 maps and illus., Toronto, 1939.)

This excellent book will be of decided interest to students of the early history of eastern Canada, and also to anthropologists—perhaps more to the latter than the former. It is one of those absorbing and all too rare volumes describing native customs at an early date, 1623–4. The journal is concerned mainly with the area enclosed by the St. Lawrence, Lake Ontario, Georgian Bay, and Ottawa River.

Before going to Canada, Sagard had begun the study of the Huron language, of which he published a dictionary in the first edition of this book. When he arrived in Canada in June, 1623, he could already converse in both Huron and Algonkin, and was thus able from the start to check his observations with informants. His stay was short for he returned to France in the fall of 1624. He had developed a great affection for the Hurons, and repeatedly notes their kindness and show of affection toward him. He was revolted by the more sordid aspects of native life—cannibalism, sexual license, inveterate gambling, filthy personal habits, and the like, but he was always astute enough to write what he saw, whether he liked it or not. Even in describing the horrid details of torturing prisoners he writes lucidly, clearly, fully, despite his inner revolt.

The early chapters describe the sea voyage and various incidents on the way to Quebec. Beginning with Chapter 6, the account swings into some surprisingly illuminating observations on villages, structures, palisades, economic life, preparation of a great variety of dishes, division of labor, sowing and cultivating. Chapters 9 to 22 deal with a large number of non-material and aesthetic traits: feasting, dancing, songs, games, bodily ornament, coiffure, designs on utensils; marriage, morals, concubinage, education and child training, disposition, magical practices, "soothsaying"; religious ideas and the concept of Creator; ceremonies performed while fishing; health and disease and treatment by shamans (whom he deigns to call "physicians"), disposal of the dead, mourning, and, finally, the great festival of the dead. Typical of some of Sagard's more facetious expressions is the title of Chapter 10: *Their dances, songs, and other silly ceremonies.*

The French is included in small type in the latter part of the book. Appropriate documents and photostats are included. The volume as a whole is conveniently arranged and excellently edited.

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Handbook of American Indian Languages, Part 3. Illustrative Sketches by Harry Hoijer, Manuel J. Andrade, Günter Wagner, Ruth L. Bunzel, and Gladys A. Reichard. Edited by FRANZ BOAS. (707 pp., $5.00. New York: J. J. Augustin, 1933–1938.)

Professor Boas has at last been able to bring to press the completed Volume 3 of the *Handbook of American Indian Languages.* The researches which made possible

four of the five sketches (Hoijer's Tonkawa, Wagner's Yuchi, Andrade's Quileute, Reichard's Coeur d'Alene) were conducted with funds from the Council of Learned Societies' Committee on Research in American Indian Languages. The fifth sketch (Bunzel's Zuni) was made possible by funds from Columbia University and the Laura Spellman Rockefeller Memorial Foundation. It is regrettable that the Bureau of Ethnology's admirable pioneer descriptions of hitherto almost unknown grammatical structures, which Professor Boas made available in the earlier two volumes, were not continued by the Bureau; it is unfortunate that he had to delay so many years before finding another means of continuing the Handbook series. The form and manner of analysis of the sketches of Volume 3 are similar to the earlier Handbooks except for some few of the progressive changes in technique that occurred during the past fifteen or twenty years. While the possibilities for comparative studies in the cases of Tonkawa and Quileute are not certain to be followed in an immediate future because of the relative unrelatedness of these to other American languages, the Yuchi, Zuni, and Coeur d'Alene treatments may have earlier utilization. Zuni, whatever be its genetic relationship, may turn out to share traits with neighboring languages so as to reveal additional historic perspectives in an area where archeology has already done so much to show time levels and connections. Coeur d'Alene gives a basis for future linguistic researches in the large Salishan language group of the Northwest. Yuchi, the first grammar of a southeastern group written in modern form, extends knowledge of Siouan types of languages.

The materials employed by the Handbook grammarians for supplementary checking and corroboration of their sketches are to be found in the short text analyses included, and also in the volumes of unpublished or published myth or other texts. For future Handbooks the quality of available corroborative data may be improved by a citation of electric disc recordings of connected speech. Since portable electric recorders date only from 1933 or 1934, the contributors to Volume 3 were unable to cite data corroborated by objective electric records. Nevertheless, in Professor Andrade's Quileute sketch there is already a utilization of a mechanical record (Ediphone cylinder) to check on certain phonetic points; this is a pioneer beginning of a trend in linguistic publications which Professor Voegelin has recently demonstrated to be on the order of the day, a trend which will improve no little the trustworthiness of our knowledge of some aspects of languages.

From the point of view of readers of a non-linguistic journal such as the AMERICAN ANTHROPOLOGIST, mention of some thoughts concerning certain purposes and methods exhibited in the Handbooks may be timely.

The pseudo-embalming of a language that occurs in a Handbook grammar may involve the effacing in the grammatical sketch of forms of expression which do not fit under the conventional rubrics of phonology and morphology. There are aspects of human mentality and culture which change imperceptibly with time and culture and receive one or another subtle form of linguistic expression, but which do not fall obviously into the two categories, phonology and morphology. These other facets of expression are as deserving of analysis and preservation and they are of especial interest and importance to non-linguists.

In many languages there occur kinds of expression that are peculiar to religious, literary, or other non-conversational types of speech. There may be differences in the speech of occupational groups, castes, age levels, or other strata of society. Linguistic workers and others have long been aware of such phenomena but grammars so far printed have omitted mention of most of them. It may be impossible to give a fully rounded portrait of a literary style without the inclusion of the syntactic and grammatical components of the style. Grammarians do not necessarily ignore or omit these things, though they usually scatter and bury them through morphologic sections of the grammar when they do note them. It should be a proper rôle of the linguist to assist in assembling and revealing stylistic and all other sorts of special speech forms when such things are virtually untranslatable in the publications of connected texts.

All American Indian languages exhibit changes consequent upon thoroughgoing cultural changes and also consequent upon the bilingualism of some of their speakers. Such processes of change may be studied directly in our own day and may be relevant for a structure of theory concerning ancient language change. Hence the worthwhileness of special sections treating of evidences of recent linguistic changes, losses, additions, and the possible dynamisms operative. It is not sufficiently instructive to report that younger native speakers use their language with a richness and elegance less than that of their elders. Is that true of some or all younger speakers? and precisely what changes occur and why?

These are only suggestions of possibilities for future Handbook grammarians, who are the only scientists who can supply certain types of information which need to be made available to ethnologists. In spite of its almost purely linguistic content Volume 3 will be greeted with enthusiasm because it has opened up no less than five new territories of knowledge. Let us hope that the next Handbooks will be rapidly forthcoming.

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Leçons Grammaticales théoriques et pratiques de la Langue Micmaque. Rev. PÈRE PACIFIQUE. (243 pp., $3.00. Sainte-Anne de Ristigouche, P. Q.: Bureau du Messager Micmac, 1939.)

This book is a grammar of the Micmac language as it is spoken by the Restigouche band of Micmac on the Gaspé Peninsula. The author, Father Pacifique, is a Capuchin missionary who has resided for more than forty years among this tribe. Consequently, we see here a work that is the result of much experience and a large amount of persevering labor.

The book is a practical grammar and should be judged accordingly. The transcription is satisfactory for purely practical purposes, but falls short of a desirable record in terms of configurational phonetics (phonemics). The phonemic ideal, unfortunately, is almost never achieved in practical grammars and often is lacking in many pretentious scientific ones. It seems a pity that so much effort could not

be brought to bear more useful results by a more widespread realization of the importance of phonemics to linguistic science. Judging by the material that Father Pacifique gives us and using a few fragmentary field notes of my own, the following schema will serve to present a tentative tabulation of the phonemes of Micmac. This will, of course, be subject to future correction and elaboration.[1]

p t k k^w q
s č
m n l
w y
i i· o o·
e e· ə a a·

It is quite apparent that the contrast of long and short vowels is phonemic, judging by the following Micmac word-pairs: *a·pi* net, *api*, bow; *ki·k*, thy house, *kik*, sharp; *wi·k*, his house, *wik*, soft, smooth; *ika·lsi*, I place myself, *ikalsi*, I defend myself.

There are several very important grammatical features in Micmac which require comment. Micmac has the dual number in intransitive verbs, a trait consistently found in the other Northeastern Algonkian languages (Malecite, Passamaquoddy, and Penobscot) and which may be said to constitute the main specialization of the Northeastern group. Whether the dual is an archaic feature of Algonkian grammar or the result of a contrast with a secondary development from the reciprocal verb (element **-li·-*) is at present a moot question.

The Micmac verbal modes are most interesting. The independent mode is probably historically subordinate (mixed conjunctive and subjunctive) in origin. Unlike most Algonkian languages the independent mode of the verb has no pronominal prefixes. In fact the only verbal paradigms in which personal pronoun prefixes appear are the subjunctive (pp. 68, 85, 99) and the negative of the imperative, only in the second person, singular, dual, and plural (pp. 64, 82, 96, 112, 127). Examples of the Micmac negative imperative are, singular *mo kmena·to*, do not take (it) off, dual *mo kmena·top*, plural *mo kmena·tolip*, where *mo* is the negative particle and *k-* the second person prefix. The corresponding affirmative forms, on the other hand, lack such a prefix. A similar absence of pronominal prefixes occurs in Arapaho and Atsina (Gros Ventre), where the pronominal subjects and objects are expressed by suffixed elements. Also, it is interesting to note that some of the intransitive *negatives* in Arapaho possess prefixed pronominal elements, while the corresponding affirmatives lack them, a situation which resembles the presence of a prefixed pronominal element in the second person of the *negative* imperative in Micmac. As to the question of whether the verbal processes in Arapaho-Atsina and Micmac are historically related, there seems to be a definite possibility that they are. The original home of the Arapaho-Atsina is known to have been further

[1] I have altered Pacifique's symbols to correspond to Americanist usage. His tj=č, kö, gö=k^w, ĝ=q, ă=a·, etc. The symbol k^w stands for a voiceless labialized palatal stop, and q for a voiceless uvular stop. Geminate consonant clusters occur.

east (Minnesota), while the Micmac seem to have some connections with the northern Central Algonkian (Cree, etc.), whose early residence was certainly not far distant.

Micmac has a dubitative mode in *-tok* (p. 56) like that of the Central Algonkian languages (Fox *-tuge*), but which is wanting in Penobscot. Apparently the Micmac verb has a special development in the possession of a usitative prefix *i·-*, which is found affixed before first-position verb stems (p. 16). Examples are: *powsi*, I embark; and *i·powsi*, I often embark. Other Algonkian languages express such notions by various types of reduplication of initial verb stems.

The lexicon of Micmac shows many typical Algonkian terms (*waw*, egg, *cl ɔmo·č* dog, *nɔme·č*, fish). A portion of the vocabulary is cognate to Malecite-Passamaquoddy (*samɔkʷan*, water, *mowin*, bear, *e·pit*, woman). Another part of the lexicon seems to be aberrant, thus: *wa·kʷ*, louse, *poktamka·si*, I go away, *kontew*, stone (Shawnee *šiikona*), čočič, snake, *pipɔnaqan*, bread (Mohican *tkʷax*, bread < **tahkwaxkan* (?), **-axkan* > Micmac *-aqan*), *kɔmo·č*, stick. Still another portion is cognate to Cree and the Cree group of languages, as shown by: *a·pi*, net, *poktew*, fire (Powhatan *pokɔtaw*), and *si·st*, three (Micmac *si·st* < **ni·st-*, by regressive assimilation; Cree *nisto*, three).

The Proto-Algonkian cluster **-xk-*, established by Bloomfield, is preserved in Delaware and Blackfoot as *-xk-*, and becomes *-sk-* in Cree and Powhatan, and for the most part in Micmac, Penobscot, and Massachusetts. Thus **-xkw-* > Micmac *-skʷ-* (**-xkwe·wa* > *-skʷe·s*, woman; **maxkwa* > *-skʷ*, bear). But **-xk-* > Micmac *q*, perhaps when medial to identical original vowels (**waxkani* > Micmac *waqantew*, bone, *-tew* being analogic). However, there is some reason to believe that Bloomfield's **x* may represent two or more original phonemes in the parent language, and there is some evidence in several Algonkian languages of the east to support such an assumption.

In discussing the approximate position of Micmac in the Algonkian stock, it may be said that in grammatical pattern Micmac approximates the other Northeastern languages, Arapaho-Atsina, and to a less degree Central Algonkian. Micmac would seem to form a definite sub-type by itself, at the same time fitting marginally into a loose Northeastern division, and showing relationships to a few special languages in the west. Also, there seems to be no clear-cut distinction in the stock between an arbitrary Eastern group and Central group.

On the whole this volume supplies a large amount of useful material on Micmac and we must thank Father Pacifique for it.

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CENTRAL AND SOUTH AMERICA

Preliminary Report on the Smithsonian Institution-Harvard University Archaeological Expedition to Northwestern Honduras, 1936. WILLIAM DUNCAN STRONG, ALFRED KIDDER II AND A. J. DREXEL PAUL, JR. (Smithsonian Miscellaneous Collec-

tions, Vol. 97, No. 1; Publication 3445, 129 pp., 16 pls., 32 figs. Washington, 1938.)

An Archaeological Reconnaissance of Northwestern Honduras: A Report of the Work of the Tulane University-Danish National Museum Expedition to Central America 1935. JENS YDE. (Reprint of Acta Archaeologica, Vol. IX; also Publication 9, Middle American Research Series, Middle American Research Institute, Tulane University, New Orleans, La., 101 pp. 60 figs. Copenhagen, 1938.)

These two publications, appearing in the same year, report the activities and results of two expeditions in the same region in two successive years, that of Blom and Yde in 1935, that of Strong, Kidder II, and Paul in 1936. The close resemblance goes little further. Yde's report is of better format, larger, with better paper and illustrations, but is little more than the reconnaissance that it is modestly termed. Blom and Yde covered more ground and visited more regions and sites than Strong's party, but spent less time at each and apparently were in the field a shorter time. "It was not originally intended to carry out any detailed investigations of certain archaeological sites . . . its object was to cover so wide a ground as possible in order to make sure where future archaeological investigations of northwestern Honduras should preferably set in." Following this purpose, observations regarding means of travel and of residence, remarks for the guidance of future investigators, and anecdotal incidents of travel are frequent. Little actual excavating was done, but the party observed all architectural features, sculpture, pottery and other artifacts in situ or in private possession or public museums, and the accounts of earlier travelers in the region were utilized. In addition to sites on the lower Chamelecón, Ulúa and Comayagua Rivers, and at the northern end of Lake Yojoa, which were also investigated by Strong's party, Blom and Yde also visited the regions of Tegucigalpa, Comayagua, Tenampúa, the Sulaco and Espino valleys, Copán and the upper Chamelecón.

This region is a most important one as having been a contact area between the Maya and Nahuatl to the west and the Lenca and Jicaque to the east; it was therefore on the boundary between North and South American cultures.

The region of Tegucigalpa on the Pacific drainage is almost bare of archaeological remains, but the neighboring Humuya Valley of the Atlantic drainage is archaeologically very rich and must have supported a dense population. Between the two is the important site of Tenampúa, possibly a fortress, in which is found a ballcourt of southern Maya type and other Mayan influences, but most of the artifacts are non-Mayan. At Siguatepeque, half way between Tenampúa and Lake Yojoa, is a rich site very different from Tenampúa and producing pottery vessels much resembling those from Lake Yojoa. Both here and at Jaral (Los Naranjos) on Lake Yojoa collections of pottery, the result of earlier excavations, were secured. Notes on these collections, with many illustrations, afford one of the most important sections of the report. The general type resembles those of the Ulúa Valley and Salvador, but some the sculpture at Jaral and some other nearby sites seems to be non-Maya, and there are obvious connections with the south. A number of new sites

were discovered by the expedition in the Comayagua Valley; here the architecture is not Maya, but the few known artifacts seem to indicate Maya dominance. Yde believes that Jaral-Siguatepeque belongs to the later part of the Old Maya Empire, but he is puzzled by the absence of plumbate ware which he states is considered "relatively early"; it is my impression that Maya ceramicists consider it relatively late.

The sixty excellent illustrations, and the index and appendices, especially an *Index of Archaeological Sites in Honduras* with bibliographical references, add value to the work.

Strong's report is less deluxe but much more meaty, a fundamental work for the understanding of the archaeology of this region. If this thorough study is only a "Preliminary Report," what may we expect later! Some of the multitude of data would hardly have been missed from even a complete report. Considerable attention is paid to the geographic, ethnic and linguistic background, and original historical sources were digested. Stratigraphical excavations with most important results were made in several sites in each of the three regions, and the many plans of stratigraphical sections, the ground plans and maps, more numerous and better than Yde's, the many plates and drawings of pottery and the bibliography make the picture and results clear.

By all odds the most important researches were those at Naco, an historic site at which Nahuatl was spoken, and where European potsherds were found. Though Strong stresses the importance of the site, he does not emphasize is sufficiently. No stratigraphy was found there and it is evidently a one-culture, one-horizon site. The ceramics differ markedly from those at any other site and, as Strong notes, the painted ware is superficially identical with the red-on-buff ware from the Chalchihuites culture of Zacatecas and Durango. Moreover his "stamped" ware gives a strong impression of being northern peripheral Mexican cloisonné ware with the mastic eroded out. These resemblances are pregnant with historical implications and suggestions for temporal tie-ups and indicate the need of further careful work at Naco.

At Playa de los Muertos the important stratigraphical results of Dorothy Popenoe were corroborated. Both here and at Santa Rita only monochrome or bichrome pottery was found in the lowest levels beneath a sterile stratum. Usulatan ware, the oldest ware in the Guatemalan highlands, was found associated in the lowest levels at Santa Rita; no examples of it appeared at Playa de los Muertos though it has been found in that complex also. At both sites the horizons appeared as refuse strata, not as burials. A similar monochrome horizon beneath a sterile layer was found at the northern end of Lake Yojoa, containing pottery inferior to that of the Playa de los Muertos Culture, and apparently the most primitive ceramic type yet encountered in Honduras. This horizon also contains archaistic solid pottery figurines.

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The Barama River Caribs of British Guiana. JOHN GILLIN. (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. XIV, No. 2, pp. xiv, 274, 30 plates. Cambridge, 1936.)

Dr Gillin's monograph reflects a trend increasingly noticeable in the anthropological field work of recent years. A healthy sign in the development of the science is an explicit critical query about the place in a larger picture and the meaning of the data recorded by the field worker. This has had a positive result, first of all, in the growing demand that field work should supply needed information leading to the rounding out of our knowledge of particular regions of the earth, not merely a series of investigations of peoples chosen solely because they had never before been studied. Even more significant, however, is the increasing tendency among anthropologists not to rest content with mere reporting of field data but to broaden their scope of activity in the direction of analyzing or interpreting the raw field material, thereby making the data meaningful in a methodological frame of reference. This trend must sooner or later lead to a science in the fundamental sense of the term.

Dr Gillin has given us valuable new information on the Caribs of the Barama River in Guiana. Although we are told that the original scope of the study was to gather and interpret data on the social organization and physical anthropology of this tribe, the monograph presents a well rounded picture of the Barama Caribs. The excellent published accounts on the Caribs by Roth have been sifted to supplement the author's data on material culture and religious life. The results are highly satisfactory for the student of South American ethnology and the physical anthropologist should find Dr Gillin's measurement valuable, especially coming from a region in which little data on physical types have been recorded.

The outstanding feature of Dr Gillin's account of Barama Carib culture is his description of community life in the village of Sawari. Here the accounts of the physical arrangement of the settlement, the formal organization and relationships of the inhabitants, and the interaction of the personalities in the group serve to sharpen the picture of Carib society as it is constituted and as it is lived. More of this type of reporting is needed in ethnology. Often even full descriptions of the content and organization of a "culture" reveal little of the interplay between social forms and individuals in the group life. Unfortunately, the six months that Dr Gillin spent in the field did not permit gathering fuller information on such topics as seasonal variations in the life of his Carib community, or on the movement of people in and out of the village.

The data on social organization are satisfactorily clear and detailed. Unilateral kinship groups are lacking and, as Dr Gillin shows in his analysis, there is no evidence of the former existence of sibs. This point, as he states, coincides with Kirchhoff's conclusions as to the absence of unilateral groups, both in earlier and in recent times, among the Caribs of northern South America. Other features of kinship and related social usages of the Barama peoples are those characteristic of other Caribs on the continent.

There are a number of points at which more information would be desirable.

The account of religion leaves much to be desired, especially in throwing light on the activities of the Piaiyen or Priest. Still six months is a short period in which to grasp the multiplicity of activities and beliefs in a culture, even one as simple as the one on the Barama River. The balance, however, is strongly on the credit side for here is definite addition to the literature on South America.

WILLARD Z. PARK

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The Apinayé. CURT NIMUENDAJÚ. Translated by Robert Lowie. Edited by Robert Lowie and John M. Cooper. (The Catholic University of America Anthropological series, No. 8. 189 pp., 30 figs., 1 map. $2.50. Washington: Catholic University of America Press, 1939.)

Nimuendajú is well known to all students of South American ethnology, and his recent publications on the Gê tribes of Northern Brazil have, as Professor Lowie says, "been full of surprises." The present work is another valuable contribution to the ethnology of the Gê tribes, and it too has its surprises. Perhaps the oustanding one is Nimuendajú's discovery of four named exogamous units called *kiyē′*. This discovery is so important that it merits rather extended discussion.

The Apinayé *kiyē′* are reminiscent of the Australian marriage classes in that members of each *kiyē′* may marry only into certain other *kiyē′*. Thus

Males	Females		Children: Males	Children: Females
A	B	⟶	A	B
B	C	⟶	B	C
C	D	⟶	C	D
D	A	⟶	D	A

As can be seen from the table, males belong to the *kiyē′* of the father and females to the *kiyē′* of the mother.

Nimuendajú points out the important ceremonial parent-child relationship which each Apinayé has to one man of his father's *kiyē′* and one woman of his mother's *kiyē′*. A number of significant features of the *kiyē′* organization, however, remain unelucidated. In the first place it appears to this reviewer that there are really two groups of four units rather than one. There is a group of four *named exogamous* units (the *kiyē′:* A, B, C, and D); but there are also four *unnamed endogamous* units made up of the intermarrying lines A–B, B–C, C–D, and D–A. If we analyze these units, a number of interesting facts appear. Since all A males are descended from A males and B females, and all B females are descended from the same type of marriage, it follows that all of the males of A and all of the females of B are related. But since A males must marry B females it is clear that A males must always marry their relatives—although, to be sure, relatives of the first and second degree are taboo. In other words, the "exogamous" *kiyē′* actually ensure "endogamy" of a kind. The more we learn of primitive social structure the more we

realize that the emphasis is just as often on achieving a particular kind of "endogamy" as it is on achieving "exogamy."

If we turn our attention now to the actual composition of the *kiyẽ'* another important fact emerges. Although A *males* are descended from marriages of A males with B females, A *females* are the product of unions of *D males* with A females. Hence *kiyẽ'* A is made up of the descendants of two entirely unrelated lines. As can be seen from the table, this is true for all the *kiyẽ'*. Thus each *kiyẽ'* is made up of two groups of people: (1) Males who are related to one another; (2) Females who are related to one another. But there is no relationship between the males *and* the females within the same *kiyẽ'*.

It would be interesting to know more about the systematic relations between the males and the females of the same *kiyẽ'*, and it would also be interesting to know more about the systematic relations within the endogamous vis-a-vis couples A–B, B–C, etc.

The Apinayé also have matrilineal moieties, but the *kiyẽ'* system works independently of them.

Unlike the Eastern Timbira the Apinayé have no age-classes. They have only a tribal initiation for males.

The volume also contains interesting sections on sex life, division of labor, birth and childhood, terms of relationship, salutations, sports and games, war, law, and religion. There are also thirty delightful pages of Apinayé myths.

JULES HENRY

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Muscial and other Sound Instruments of the South American Indians—A comparative ethnographical study. KARL GUSTAV IZIKOWITZ (Göteborgs Kungl. Vetenskaps- och Vitterhets-Samhälles Handlingar Femte Földjen. Ser. A, Vol. 5, No. 1. xii, 433 pp., 265 figs. Göteborg: Elanders Boktryckerei Aktiebolag, 1935.)

This carefully worked out and annotated monograph, furnished with numerous illustrations, distribution tables, and an extensive bibliography, fills a long-felt need. A fair sampling of the literature has been consulted, in addition to museum collections, chiefly European. While the main emphasis is on technology, there are references and discussions connected with the functional aspect. The frequent associations of deer (and deer-hoof rattles) with ideas concerning rebirth, new life, and women, are interesting. Linguistic evidence (etymologies of names of musical instruments), however, needs to be treated with caution, as the quality of most Indian linguistic material from South America is still far from satisfactory.

The classificatory scheme employed is mainly that of von Hornbostel and Sachs, with suggestions from Balfour and Norlind.[1] It is well adapted to the South Ameri-

[1] Erich M. von Hornbostel und Curt Sachs, *Systematik der Musikinstrumente.* (Zeitschrift für Ethnologie, vol. 46, 1914), pp. 553–590. Henry Balfour, *Musical Instruments.* (Notes and Queries on Anthropology 5th ed., 1929.) Tobias Norlind, *Musikinstrumentsystematik.* (Svensk Tidskrift för Musikforskning, vol. 14, Stockholm, 1932), pp. 95–113.

can material, but some further distinctions could be recommended. For instance, the "jingle rattles" (suspended rattling objects) are dealt with primarily according to their material (hoofs, fruit shells, shell, metal), which is illuminating; fruit shells are very rarely used for this purpose in North America. But since materials are often substituted for one another, and the group is a very large one, some further criteria, e.g. the place on the body or clothing where the rattle is suspended, would be helpful. Wind instruments might have been separated more systematically according to whether they are open or closed at the bottom. References and descriptions in much of the literature are so vague, however, that at present many important distinctions are difficult if not impossible to carry through consistently. Obscurity of the literature may be responsible for some errors: not all drums closed at the bottom should be considered together with the kettle-drums; the keg-formed drums (like those of our Southeast) are probably a contamination of the clay water-drum and the cylindrical wooden drum. Under deer-hoof rattles are lumped stick rattles, shaken in the air, and staff rattles, pounded on the ground. Staff rattles show up again in the discussion of tubes stamped on the ground, which Izikowitz wishes to derive from the staff rattles by way of tubes that have jingling appendages. Since stamping tubes do not occur on the continent aside from South America, while the staff rattle and stick rattle are found on both continents—but with different distributions—it is of value to keep the stick and staff varieties apart.

As we have no compilation of North American muscial instruments comparable to Izikowitz's, some of his statements of distribution need enlargement or correction. A number of musical instruments which he takes to be restricted in this hemisphere to South and Central America, or to which he gives no North American references, occur also in the North. For instance: shell rattlers (Southwest, also archaeological), sistrums (objects sliding along a rod or ring and clashing together, Northwest Coast), pottery rattles (Southeast archaeological, Southern California), rattling vessels (Southeast archaeological, Northwest Coast baskets), buzzing nuts (chiefly California), notched flutes (Southwest, Basin, Southern California), etc. Other instruments have a considerably wider extension in North America: deer-hoof rattles are found in the Plains and Woodlands as well as the West and Mexico, gourd rattles in the Plains in addition to the South and East, and the notched stick is not confined to the West. The scratching and rubbing of skins reported in the old literature from the Southeast[2] is probably an extension of the rubbed idiophones in Central America. To the references for the foot drum summarized by Izikowitz (Central California) may be added one for the Hopi, although it is not used there as an instrument of musical accompaniment.[3]

[2] See John R. Swanton, *Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico* (Bureau of American Ethnology, Bulletin 43, Washington, D. C., 1911); Chitimacha: p. 350, 352; perhaps Houma: p. 289.

[3] W. Ehrenreich, *Ein Ausflug nach Tusayan (Arizona) im Sommer 1898* (Globus, vol. 76, 1899), pp. 154–155. W. Hough, *The Hopi Indians*, p. 153. Cf. R. Lowie, *The Emergence Hole and the Foot Drum.* (American Anthropologist, vol. 40, 1938), p. 174.

South America is even at first glance much richer in musical instruments than North America. There is a great variety of wind instruments, while in North America drums preponderate. A number of southern forms are not duplicated in the North and invite speculation as to independent development or transmission. Negro influence has complicated the picture for, among others, the muscial bow[4] and the hollow log signal "drum." So has White influence, in connection with the double-headed "frame drum" (tambourine drum) and various wind instruments. Both influences have at times resulted in the replacing of a pre-Columbian instrument by a similar intrusive type, or in combining features of both into a new unit. Izikowitz leans, on the whole, toward assuming independent development on American soil, which leads him occasionally to exaggerate differences between similar forms. In some cases, however, agreements with transpacific forms are so specific that the alternative explanation becomes very tempting. Von Hornbostel's suggestions concerning the manifold similarities of South American and Melanesian panpipes have revealed the most spectacular instance,[5] although Izikowitz is right in stipulating that a larger number of specimens should be studied. Other similarities might be mentioned that have not yet been pointed out, for example the whittling down to a plain of that part of the flute in which the fingerholes are placed (and occasionally surrounding them with ridged squares), which is found on Californian and South American (especially Chaco) flutes as well as on Malaysian and Tibetan.[6] Or the Pima-Yuman type of bamboo flageolet (with the plugging node near the middle—or below the upper end—of the tube and with an external air-duct covered by a bandage or the finger) which occurs in South America on the upper Xingú and shows up again in Malaysia.[7]

Izikowitz thinks the hollow log drum originated independently in America, from the custom of signaling on flat roots or hollow trees, for which he quotes South American references.[8] The hoof-rattle he derives from hunting amulets, the stamping tube from the rattling staff, the cylindrical drum from the pot drum. The double-headed frame drum he ties up with the wish to enclose rattling objects

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[4] Miss Helen H. Roberts' extensive comparison of American with Polynesian, African, etc. forms in her *Ancient Hawaiian Music* (B. P. Bishop Museum, Bulletin 29, 1926), pp. 322–346, apparently escaped the author's attention.

[5] Erich M. von Hornbostel, *Über einige Panpfeifen aus Nordwestbrasilien* (Th. Koch-Grünberg, Zwei Jahre unter den Indianern, vol. 2, Berlin, 1910), pp. 378–391; *Über ein akustisches Kriterium für Kulturzusammenhänge* (Zeitschrift für Ethnologie, vol. 43, 1911), pp. 602–615.

[6] See W. Kaudern, *Musical Instruments in Celebes* (Ethnographical Studies in Celebes, vol. 3, Göteborg, 1927), figs. 106, 111, 115, 118; Charles K. Wead, *Contributions to the History of Musical Scales* (Smithsonian Institution Report of the U. S. National Museum for 1900, Washington, 1902), plate 3, figs. 6 and 7.

[7] See W. Kaudern, *op. cit.*, pp. 244–245, and C. Sachs, *Die Musikinstrumente Indiens und Indonesiens* (Berlin 1915), pp. 150–151.

[8] See, however, Malay references to the same custom discussed by R. von Heine-Geldern and A. Steinmann (Anthropos, 1933), p. 485 and (1938), pp. 656–657.

in the instrument, and also with the rattle which consists of a strip of wood bent into a circle and covered with skin. Some of these connections are suggestive, others may be questioned. The cylindrical drum, for instance, is an exceedingly common generalized form throughout the world, but agreements in the shape of the base of Central American with Polynesian forms make an independent development on American soil, from the pot drum, unlikely,—at least unlikely to explain the presence of all types of this drum; no doubt the pot drum was often displaced by the cylindrical form. Izikowitz thinks the single-headed tambourine drum of North America (the "hand drum" of our literature) is later than the double-headed drum. Yet the construction of Peruvian double-headed drums which he describes, and which are the best proof of the pre-Columbian existence of double-headed drums in America, suggests a derivation from single-headed ones. In questioning, as Nordenskiöld did, the transmission of the signal drum to South and Central America, Izikowitz does not give sufficient weight to the fact that this type of "drum" is used for the same purpose, signaling, so extensively in Southeast Asia, Africa, and the Pacific. In other difficult cases he suggests that an instrument may be pre-Columbian in North America and post-Columbian in South America—for instance the musical bow, the notched stick, possibly the plugged flutes; a very likely contention.

Dr Izikowitz has thrown a good deal of new light on some of the most irksome details of South American material culture and on their interpretation. Considering the present state of the material, he has done an heroic job. His interpretations are spirited and stimulating whether or not the reader stands convinced. For a study of North American musical instruments this will be an indispensable help, for that of the South American it is a life-saver.

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MISCELLANEOUS

Twilight of Man. EARNEST ALBERT HOOTON. (xii, 308 pp., illustrated. $3.00. New York: G. P. Putnam's Sons, 1939.)

The good will to help is blind and often cruel, if it is not guided by true insight based on knowledge. A physician can only be of use when he has first carefully investigated the cause of disease and when he is quite clear what his remedies can effect; otherwise he is a positive danger. Physician Hooton wants to give man a biological purge, in order to prevent his further alleged biological and social decay, and in order to secure eventually an improvement in his general condition. It is his firm belief that "we must build the future of humanity . . . upon man's biology, about which," interestingly enough, he adds "we know virtually nothing at all." Physician Hooton with calipers in hand seems only to see the mensurative aspect of what he chooses to call the "disease" of human deterioration. What human biologists, geneticists, and ecologists have to say in this connection he completely ignores, while the cultural aspect of the problem is dismissed as of no importance.

Yet he attributes the cause of human deterioration to the social mismanagement of man's biological affairs. Now, if man has socially mismanaged his biological affairs, surely he can by the same means learn to manage them. Indeed, this is a possibility which Hooton not only recognizes but urges with all the emotion and power that is within him. If we are to be saved we must set to work at once and learn how to improve our species biologically; for "there is but one way of making a man, and that is biologically." In his most rhapsodical moments young Mr Tristram Shandy was never so certain.

Throughout Hooton's book the assumption is that man's ills are fundamentally biological ones, and that all our misguided humanitarian endeavors have merely contributed to increase and exacerbate those ills. He dismisses as puerile the suggestion that it may be the other way round, that man's alleged biological deterioration is due to his social ills, and that if these were corrected much of the human "degeneracy" which he now finds so alarming would never appear. But no, Hooton believes that too much is wrong with too many of the genes of too many individuals in our society, and it is the genes which urgently require attention. This is an opinion which is not shared by those experts who have made it their business to inquire into this matter, and upon whose fundamental bionomic and genetic studies every scientist must rely for the foundation of his own beliefs concerning man's present biological condition. For some reason, best known to himself, Hooton chooses to ignore the work of Johannsen, Bateson, Jennings, Fisher, Haldane, Hogben, Dahlberg, and a host of other modern students of human biology. The works of these students are available for everyone to read and there is nothing in the least recondite about any of it. It is all summed up in the succinct statement of Jennings, "It is probable that changes in environment—changes in treatment of infancy, in education, in tradition, in customs, in ideals, in economic situation and the organization of society—can do much more for the ills of society than can be done through direct attempts to change the genetic constitution of the population."[1] That is the view which every scientist must take, for the very cogent reason that in the conditions of human existence as we know them the evidence points fairly clearly to the fact that changes in environment, as defined by Jennings, are capable of working the most remarkable effects upon individuals of almost every kind of genetic constitution.

The conditions which enter into the making of a human being are many, and there is not the slightest justification for singling out a factor such as the "biological" one from amidst a host of others such as are comprised within our social and economic framework, and asserting that it is the *sufficient* cause of all our ills when we do not even know that it is a *necessary* cause. It has already been suggested that Hooton's exclusive preoccupation with the mensurative aspect of man's development has rendered him incapable of appreciating the enormous role which cultural factors play in the production of every kind of human being. Again and again Hooton reiterates the statement that we know "virtually nothing" concern-

[1] *The Biological Basis of Human Nature* (New York, 1930), p. 246.

ing the manner in which heredity works in man, and yet he fervently maintains that that very heredity, concerning which we know "virtually nothing," is responsible for human deterioration. Most students have taken the opposite view and have stated that since we know "virtually nothing" about man's biology, it would be unwise to take any steps towards the improvement of his present biological condition before much more extensive and intensive research in human genetics and in the numerous fields of investigation correlated therewith has been carried out. This would involve the cooperation of specialists in various branches of medicine, psychology, chemistry and, not least, the social sciences. In a recent declaration on this subject these were the words used by the seven leading geneticists who signed it, namely, Crew, Darlington, Haldane, Harland, Hogben, Huxley, and Muller.[2] Is it not obvious that, as the geneticists I have just quoted put it, "there can be no valid basis for estimating and comparing the intrinsic worth of different individuals without economic and social conditions which provide approximately equal opportunities for all members of society instead of stratifying them from birth into classes with widely different privileges?" Hooton repeatedly asserts that behavior is a function of man's organism, but even if that were more than partially true, it is a first principle of all scientific procedure that no judgment can be validly expressed concerning the causative factors involved in the production of any condition until all the conditions entering into its production have been considered and properly evaluated. This elementary principle has been dispensed with by Physician Hooton, and we are therefore unable to accept his diagnosis of man's present ills or his prognosis as to their future development.

All the physicians are agreed that something is rotten in the state of human society, and it would seem clear to most students of society who possess some knowledge of human biology that, except in a small number of cases, bad minds and bad behavior are not made by bad genes, but by the action of bad social conditions. In support of this belief there exists an enormous amount of evidence, but this is totally disregarded by Hooton. In his excellent chapters on *Race* Hooton recognizes that the mental differences between races are for the most part culturally produced, but when he comes to consider man in our own society he deals with him as if he were a biological organism which has been bio-socially pre-determined to be what he is; as if each individual had been exposed to much the same cultural experience; so that the differences in the responses to this experience must be due to what is within the individual biologically, and not what is without him sociologically. This is, of course, patently false, and constitutes Hooton's fundamental error. The differences in social, cultural, and economic experience to which, in our socially stratified society, the groups and individuals constituting it are exposed are enormous, and to the greatest extent demonstrably account for the effective differences between them, and for much of the "degeneration" which Hooton points to. Certainly there are among us many individuals who are genetically seriously defective, and who are capable of transmitting their defects to their offspring. Social regulation is

[2] See *Science News Letter*, vol. 36, 1939, pp. 131–133.

in these more obvious cases, such as certain kinds of feeblemindedness, necessary. In the case of rare recessive defects such, for example, as amaurotic idiocy, *nothing* needs to be done since these conditions in large populations eliminate themselves. But no one would seriously suggest that such classes of individuals are responsible for our social ills. Our troubles emanate not from biological idiots but from social idiots; and social idiots are produced by society, not by genes. Surely, it is social and not biological therapy that is indicated.

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White Settlers in the Tropics. A. GRENFELL PRICE. (Special Publication No. 23 of the American Geographical Society, xiii, 311 pp., pls., maps. $4.00. New York, 1939.)

This latest publication of the American Geographical Society forms a comprehensive and authoritative introduction to the problems affecting permanent settlement of the tropics by whites. Its appearance is most timely,—in view of current disputes over *lebensraum* between "have" and "have-not" nations,—and its coolly arrayed evidence should give pause to those who would hastily transplant large communities of European whites into sparsely populated areas of the tropics. Prospective transplantees, especially, will do well to read it with care.

The authoritative character of the volume is attested both by its extensive documentation and by the many expert hands through which it passed before publication. The author, Dr Price, is a distinguished Australian student of environmental problems, and before his manuscript was published, it was read and commented upon by a number of other Australian scientists, by Dr Malherbe of South Africa, by Professors Shattuck and Drinker of the Harvard Medical School, and by Dr Ellsworth Huntington. At the invitation of the publishers, Mr R. G. Stone of the Blue Hill Meteorological Observatory has interdigitated the text with a number of pointed comments and has added several appendices dealing with the most recent conclusions reached by laboratory study of physiological factors germane to the general problem.

Some forty pages are devoted to a summary of the historical evidence bearing on successful and unsuccessful white settlements in the tropics, and it is made clear that, while reasons for failure are usually many and obvious, the essentials for success are not readily to be defined. Hence, no doubt, the preponderance of pessimistic over optimistic views among first-hand observers in what Dr Price describes as the "pre-scientific" period. Contrast, anticipatory of a number of recent studies, was supplied by Bryan Edwards, the Jamaica historian, who wrote in 1793 that white planters born in the West Indies were taller and in general healthier, both mentally and physically, than the kin who came out to them from Europe.

Regional studies account for the bulk of the text and provide detailed discussion of white settlements in Florida, Queensland, the West Indies, tropical Australia, Costa Rica and South America, Africa, and Panama. Data on soil, climatic conditions, productivity, communications, economy, culture, inter-racial complications, health and vital statistics are considered for each region and appraised. The final

chapters attempt to summarize and draw conclusions from the data presented.

The conservative and inconclusive nature of the generalizations which the author permits himself will be received with approval by scientists, but they will give rise to little joy among political planners. Concise answers to the questions proposed are no more feasible now than they were in the day of Bryan Edwards, though it begins to be possible to define and isolate the subsidiary problems, to plot their relationships, and to map the attack. In essence, the points which emerge with greatest clarity from Dr Price's broad survey are as follows:

The Hollywood concept of the fertile tropics must be abandoned. Soil quality varies between wide extremes in the tropics, many regions being all but sterile while others are highly fertile. The need for careful soil surveys is great, for neither white nor non-white peoples can raise the agricultural foodstuffs essential to their health on sterile land.

The importance and effect of climatic factors on human health remain open to dispute. Laboratory experimental techniques cannot duplicate the conditions actually encountered in the tropics, nor can they yet assess the degree to which the human organism may adapt itself to tropical conditions during long exposure. Though Dr Price is prepared to accept the concept of climatic optima for human beings, and of possibly different optima for different races, the evidence presented indicates that racial differences in adaptation and adaptability are not yet soundly established on a pure physiological basis. Cultural and economic differences confuse the issue and vitiate even those conclusions which seem most self-evident. Mr Stone notes that even the protective power of heavy pigmentation, long accepted as axiomatic, calls for more precise definition.

Communication is found by the author to be the environmental agency which is most clear-cut in its action. Though isolation is sometimes beneficial,—as in preventing external demographic pressure and the spread of disease,—it is usually fatal. Without easy communication the white settlement in the tropics must lead a lean economic existence, must forego the medical and other aids which the modern world can provide, and is usually subject to physical and psychological disintegration and to absorption by native peoples.

Advances in medical science have greatly improved conditions for white settlers. Where economic status and easy communication permit, hookworm and a host of other tropical afflictions are today controllable while other enemies are being attacked on a broad front. Improved knowledge of dietary needs, of alcohol's failure to substitute satisfactorily for exercise even in hot climates, and of the undesirability of transplanting European standards of dress and housing will do much to assist the white pioneer of the future.

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Religion in Primitive Society. WILSON D. WALLIS. (xii, 388 pp., 4 pls., $3.50. New York: Crofts and Co., 1939.)

This new book on primitive religion displays an erudition far beyond the field of anthropology proper. It does not limit itself to manifestations of religious life

in the so-called preliterate cultures but also deals abundantly with Brahmanism, Buddhism, Taoism, Judaism, Christianity and Mohammedanism. The composition of this work must have required the perusal of a tremendously vast library material. The bibliography alone covers thirty-six pages at the end of the volume.

This book should be considered a survey of the field of primitive religion rather than an attempt at a novel interpretation. The accent has been placed more strongly on traditional definitions and on factual illustrations as such than on their presentation in a new light. External and formal criteria have been used for the organization of the material under chapter headings such as *Sacred Places, Sacred Objects, Sacred Trees, Sacred Animals, Sacred Persons, The Gods* and the like.

The theoretical points of the book are supported by examples drawn from too wide a range of cultures. Thus, for instance, a brief quotation on the Chukchee is preceded by one on the Ponca and followed by a few lines on the Negritos of the Malay Peninsula (p. 188). Even a person familiar with ethnological literature feels overwhelmed by this unceasing flow of tribal names and items of culture, torn out of the living wholes to which they rightly belong, and treated without any historical perspective.

The author is a great reader of classical philosophy and literature. His text is rich in citations from such thinkers as Plato, Sir Thomas More, Thomas Hobbes, Spinoza, Abbé Mably, and Samuel Johnson. At the same time it would be somewhat difficult to relate his work to any particular school of anthropological thought.

The volume is provided with beautiful plates. Its richness in factual material and its eclectic character should appeal to the general reader.

JOSEPH BRAM

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The Study of Society, Methods and Problems: Edited by F. C. BARTLETT, M. GINSBERG, E. J. LINDGREN, R. H. THOULESS. (xii, 498 pp. $3.50. New York: The Macmillan Company, 1939.)

This work represents the results of a colloquium in which a number of English students of social problems came together for a systematic discussion of their conceptual schemes. As the editors say:

> The volume is addressed mainly to those who are engaged upon, or who wish to engage upon, social research, and who require to know what methods are already available, upon what established conclusions they may reasonably build, and what are some of the outstanding problems which might immediately repay further study. The employment of many of the methods described obviously demands specialized training. At the same time it is recognized that invaluable services can be rendered by persons who have had little opportunity to obtain technical instruction, and at various points in the book attempts have been made to indicate how the amateur investigator can best assist in the development of social studies.

In this review, we shall discuss the utility of these methods from the point of view of the anthropologist.

At the present time, we have become increasingly aware that the methods we

use to attack nature determine the results we obtain. This approach has been called the operational point of view by Bridgman and simply means that we can obtain no information about phenomena other than that afforded by the operations (ways of describing the data) we use. In the various contributions to this volume, by social and educational psychologists, social workers, sociologists, psychopathologists and anthropologists, although the procedures are not rigorously-defined operations in Bridgman's sense, nevertheless it is clear that the differences in the methods used are so great that one cannot help having the impression that the investigators in the different sections are not talking about the same phenomena. It is true that some effort is expended in cross-referencing the various papers and in referring to the discussion of specific points by another specialist, but essentially *The Study of Society* represents nothing more than a convenient if somewhat incomplete handbook on methods and literature in the subjects of the constituent individuals who took part in the discussions. The differences in the points of view expressed result from the differences in the points of departure, in the operations selected to attack what are supposedly the same phenomena.

A convenient illustration of this operational determination is to be found in the several articles on social and educational psychology. Here a number of different techniques are discussed, but fundamentally a division may be made into the use of questionnaires (including intelligence tests and rating scales) which may be subjected to elaborate statistical treatment, and laboratory methods, using techniques supposedly modelled on the methods of natural scientists. It is perfectly clear from the several discussions by Pear, Bartlett, Collins, Thouless, Blackburn, Nadel, Vernon, and Earl, that the primary interest of the psychologist is in investigations in which these techniques can be used.

To an anthropologist, the discussion by A. I. Richards of *The Development of Field Work Methods in Social Anthropology* is the occasion for a certain pride in the objective point of view in his field. Dr Richards has provided a very good summary of the developments in anthropology and the different points of view to be found among its practitioners, but she makes abundantly clear that anthropology is primarily an observational science, devoted to the description of the behavior of individuals in time and space. The difference in method of anthropologists in the study of society as contrasted with that of most sociologists and social psychologists depends primarily upon the fact that the anthropologist tries to describe what each individual says and does as observed or interpreted from the words of informants. What the anthropologist tries to do, she says, is to tell not only "what happened," but also give "a description of how the people behaved and who were the actors," a statement which the reviewer would rephrase to say that the aim of anthropological field work is to describe who does what, with whom, when, where? At this point, differences arise in the way the data is analyzed, whether from the historical point of view with emphasis on working out relations between cultures or else in what Dr Richards calls "intensive sociological investigations" (e.g. the work of Malinowski and others), but in both cases an observational approach is regarded as the basis for later analysis.

Two other articles are directly of interest to the anthropologist, the first, Nadel's discussion of *The Interview Technique in Social Anthropology*, deals with the purpose, advantages and limitations of the interview rather than with the technique by which rapport is secured and information obtained. A few words of caution are introduced as to the problem of interpretation, but there is little emphasis upon the way in which the interviewer combines his inquiry for information with his interview methods.

E. J. Lindgren in *The Collection and Analysis of Folk-lore* gives us a long and systematic account of the development of folk-lore studies, and it may be compared to A. I. Richard's account of social anthropology as providing an equally interesting and adequate summary of the principal contributions and points of view in this subject. The close relationship with social anthropology is pointed out, but, as is evident from the discussion, a further unification of the two subjects would be of considerable value. It is not an overstatement to say that there is an astonishing lack of information about the work in folk-lore by anthropologists and vice versa and though we ordinarily possess some acquaintance with folk-lore studies, we are liable to regard it as aside from the main line of investigation, in spite of the work of Boas, Malinowski and others. The European work indicates, too, that the study of the social anthropology of Europe is a fertile source for individuals whose interest in the cultures of native peoples finds fewer and fewer fresh subjects for study. Most interesting for the anthropologist, however, is the discussion by Lindgren of the work of F. C. Bartlett whose experiments on *Remembering* (the title of his book) "go farther towards establishing a scientific basis for estimates of change in folk-lore material than anything yet attempted by folk-lorists." In testing subjects who memorized a North American folk tale, translated by Boas, called *The War of the Ghosts*, Bartlett presents an account of the way in which individuals reproduced this story and the changes which took place in the process. The evidence that he gives us, summarized by Lindgren, indicates very clearly that many of the ideas of folk-lorists and social anthropologists about the stability of culture, at least as judged by these experiments, have to be critically reexamined.

A final word can be said about the general implications for the study of society revealed by this colloquium. It is clear, from an analysis of the methods and results of the several fields considered, that there are two fundamental approaches to these phenomena, possessing different aims, conditioned by different operations, though to a large degree these are implicit rather than explicit in the descriptions available. The first of these is the anthropological point of view, an observational science, to which must be added the field of social case work, whose methods and points of view are similar to those of the anthropologist, though necessarily modified by the requirements of practical solutions of individual difficulties and restricted by the absence of a comparative point of view. The second approach is that which endeavors not to describe observable behavior, whether of an individual or the members of a group, but rather seeks to deal with "problems" whose definition is almost uniformly not based upon observation. These include sociology, social psychology, educational psychology and child psychology. This division does not

hold entirely, of course, since within all these subjects there are to be found small enclaves of individuals whose practice falls within one or the other camps. Yet this distinction is clearly brought out by the contributors to *The Study of Society*. It may seem to many a trivial one, but in arguing from the history of the exact sciences, it may be pointed out that the acceptance of the tradition of objective description was a necessary step in their development.

The significance of this division lies in its bearing on the policies popular today in research centers. One of the most cherished beliefs in University and Foundation circles has to do with the advantages of collaboration by a number of specialists in different fields in the human sciences, working together on what is regarded as a common problem. The arguments in support of such a program are twofold: (1) such collaborative enterprises have been successful in the physical sciences; (2) the intensity of specialization at the present time is such that no single subject is able to procure results in the study of human relations; therefore, if one subject makes a failure of it, the probability of some sort of success is greater if several are brought together. In pursuit of this belief, much money is spent and more effort, yet as far as can be seen there have been no tangible results which justify the enormous expenditures of money and time. In every case known to the reviewer, the consequences of ambitious programs of this sort have either been that the workers have produced no more than they would have done if they had never been associated together or else they have produced much less. This is not to say that much good work may not be done by the several investigators, or that in the case of colloquia, of which *The Study of Society* is an instance, the personal discussion which takes place may not enable the individuals taking part to state for the others some of the elements of their conceptual schemes. The reason for what seems, to the reviewer at least, the inevitable failure of such enterprises to obtain results different from those which the individuals would have produced by themselves lies in the disregard of the reason for the successes which often do occur in the physical sciences, namely, that the subject of investigation was rigidly defined in terms of a common set of operations. In other words, the investigators started out with the same point of view; they did not hope to achieve it at the end of their collaboration.

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Major Social Institutions. CONSTANTINE PANUNZIO. (xx, 609 pp. $3.75. New York: The Macmillan Co., 1939.)

One of the great amenities which the college student of our time enjoys is the excellent quality of the textbooks which assist him along the path of learning. The present work, on a very important subject, does not unfortunately fall into such a class. It is a brave attempt at an exposition of the nature of those fundamental complexes of thought and activity which universally and in all times subserve the basic needs of mankind—the major institutions. Professor Panunzio has planned his book well, and its contents really provide the basis for a liberal education. It is a

pity, therefore, that such an interesting volume should be marred by so many errors of fact; by unwise selection of authorities; and by the omission of what by any standard of judgment should have been included.

The important sections dealing with biological and anthropological matters should have been submitted to experts for critical reading before being sent to the printers and out into an unsuspecting world. If, as is sincerely to be hoped, this volume passes into a second edition, these sections should be thoroughly overhauled, for they contain more errors to the printed line than I remember to have seen in any book for a long time. Turning the first hundred pages one may pick at random Table 9, which purports to show the supposed mental characteristics of the main human races. This table has been reproduced from an essay by Dr Aleš Hrdlička; in a footnote on a preceding page Professor Panunzio is careful to point out that "the psychological classification is particularly arbitrary and must be taken with great reservation." But if that is so, why publish such a table at all? The remarks on the calvarial index suggest to the student that the height of the forehead reflects the state of development of the frontal lobes of the brain; a suggestion which, in the human species, is meaningless. While such a statement as that "Stature, size, nasal depression, the shape of the face, the shape of the eyeball, the height and width of the nose, the protrusion of the cheek bones (prognathism), the thickness of lips, the prominence of the chin—are the main features used for classification" (p. 89), contains almost as many downright errors as words! In these sections of the book there are scores of such howlers and errors; it is unnecessary to refer to them here. Throughout the book there are weak places which need tightening up. But however good the remainder of the book were, it could not compensate for the deficiences of the first hundred pages.

There is a useful glossary of terms. The book has been very tastefully produced by the publishers. A thorough revision of this book would make it one for which there is definitely a place.

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Frustration and Aggression. John Dollard, Leonard Doob, Neal E. Miller, and others. (viii, 209 pp. $2.00. New Haven: Yale University Press, 1939.)

Frustration and Aggression insofar as it represents a cooperative study by a group of scientists on a subject of great psycho-sociological importance, is a step forward. But insofar as one of its major premises refers the basis of social behavior to biology, which must ultimately lead to erroneous and reactionary conclusions, it is a step backward. To regard the processes of weaning and sphincter control, for example, as necessarily frustrating, and to postulate that aggression is a primary and inevitable response to frustration, is just an indirect way of explaining the basis of aggression in biological terms.

The assumption that "aggression is always a consequence of frustration" is a sound attempt to remove aggression from the mystical realm of instincts. The proof

that is offered in support of this contention demonstrates that an explanation of an aggressive act in terms of the existence of a motive or need for aggression is psychologically untenable. Except in abnormal cases, aggression appears never to be an end in itself, but a means which is utilized when society permits, to attain certain ends. If this study had concerned itself only with experimental procedures to test this hypothesis, with descriptions of the varieties of aggression arising from different sources of frustration, and with the interpretation of relevant clinical, sociological, and anthropological data, it would have been a major contribution.

Unfortunately, the authors assume that this tenet is too obvious to require much elaboration and center most of their attention on the second basic postulate, which, by their own admission, is not as apparently justified as the first; i.e., "whenever frustration occurs, aggression of some kind and in some degree will inevitably result" (p. 1). This statement is concretized by the contention that "life in society is inevitably frustrating" (p. 172) which means, of course, that as long as human beings constitute themselves in some form of society, aggression, which has as its goal injury to another person, is inevitable.

The authors attempt explicitly to avoid what is implicit in their assumptions. "It is not necessary to take the position that frustration originally (in a genetic sense) produces aggressive behavior. . . . Whether the relationship be learned or innate, when the curtain rises on the theoretical scene which is surveyed in this volume (from birth on) frustration and aggression are already joined as response sequences" (p. 11). Obviously it is important for their position whether it be innate or not, since if the relationship be learned, then aggression no longer becomes the *inevitable* consequence of frustration. Stated in the way it is, it actually becomes impossible to prove the hypothesis. When there is no evidence of aggressive behavior, there is simply a glib recourse to the concept of repression. Freud arrived at the concept of repression, not because of the absence of evidence for particular theories, but because repressed materials actually signalled their presence by certain definite symptoms. Moreover, by definition alone, every response to frustration can be regarded as an aggressive act, howsoever displaced and distorted. Thus the crying of an infant when it is hungry for food, and the reading of romantic stories when one is hungry for love are regarded as expressions of aggression.

In the course of the discussion there is a contradiction of the position originally taken. One gathers in passing that "substitute" responses, which could not conceivably be called aggressive acts, occur with great frequency in the face of frustrations of all kinds. This contradiction must have been promptly repressed, inasmuch as the remainder of the book continues as if this statement had never been made. The emphasis on "substitute," moreover, seems to be more substitute for the "primary and characteristic reaction to frustration" (p. 9) which is aggression, than substitute for the original goal-response which is not possible. Such conceptions can only aid in obscuring the material further. For example, certain interesting experiments on frustration are reported, but the results which are interpreted in terms of displaced aggression may in the first place be simply a reflection of a negative attitude (justified realistically) toward the test situation. Secondly, even if such

interpretation were valid, the data could not conceivably be regarded as evidence for the inevitability of the frustration-aggression sequence. In the same vein of forcing data to conform with the hypothesis, it is pointed out that schooling, like other socialization processes, is a frustrating experience. The jibes of many Americans at the impracticality of part of their education is thus interpreted as "verbal reflections of the aggression that has been generated by the frustrations imposed upon them by their former teachers . . ." (p. 160). Is it too naively simple to regard such statements as verbal reflections on the actual inadequacies of their education, evidence of understanding rather than of aggression? The authors do not even entertain this as a possibility to be denied.

This disregard for the reality-basis of particular statements or actions leads them to perceive some superficial similarities as indicative of genuine identity. Thus "the gratifications offered by working in a fascist or a communist country . . . are somewhat religious in nature" (p. 169) because overt gratification in all three sources is not obtainable at the moment "but is defined ultimately for the future" (p. 169). Further, the Nazis are simply displacing aggression by making (false) statements about the Jews, and Russia is simply displacing aggression by "telling her people why they have been miserable (in the past) and why the maximum of gratification is not yet theirs" (p. 158). Labor organizations, in similar vein, are regarded as acts of aggression against the frustration experienced as a result of exploitation. In terms of their definition of aggression alone, such a statement is specious. Aggression is defined as that act which has as its *primary* purpose the injury to a person. Labor unions are organized primarily in self-defense of the just rights of labor, which only under certain conditions may incidentally injure the employer. From the point of view of the authors one would be forced to consider any objection against unfairness as an act of aggression.

The various factors which are found to be associated with criminality, such as low income, home conditions, etc., are reanalyzed in terms of the frustration-aggression sequence, and an added factor, "anticipation of punishment." Though the latter is no doubt of psychological importance, the somewhat uncritical acceptance of the "common sense" understanding that "criminality tends to vary inversely with anticipation of punishment" (p. 139) rests upon a particular philosophy of man. Is it true that man must be browbeaten into being good? Is man a creature innately driven to narrow self-seeking so that he can regard socialization only as an infringement which is to be fought against as along as anticipated punishment is not too severe? One should expect that in the days of old when a man was hung for anything from stealing bread to murdering ten people that crime would have been practically nonexistent. One could wipe out crime by the simple expedient of making punishment severe enough. The relevant sociological data do not support these conclusions.

One may well question a concept of frustration which rests so heavily upon definition in terms of the objective situation. Frustration is a subjective experience. It is a well known fact that individuals differ in the ease with which they feel frustrated and in the kinds of situations which are perceived as frustrating. Only if

any deprivation be regarded as inevitably frustrating would this interpretation of particular situations as universally frustrating be tenable. To make 'deprivation' synonymous with 'frustration' is to view man as having innate specific drives which demand immediate gratification. The arguments against such a philosophy of man are too well known to require elaboration. The following statement is in keeping with their implicit philosophy. "Frustration is a constant feature of in-group life because of the necessity of interfering with existing goal-responses so that new ones may be learned" (p. 90). Aside from the observed fact that children do not feel frustrated by restrictions which they feel are justified, this presupposes a trait against change to exist in man. Unless made to fear new events, or to resent unnecessary changes, it would seem that children and adults welcome new experiences, eagerly adopt new ways of coping with the environment. The authors may be said to be implictly asserting a native conservatism in man, thus introducing a new innate drive which we might call *status quo*. The geneticists have not yet offered evidence for its existence.

An analysis of the Ashanti concludes the book. The publications of Rattray have been analyzed to yield information about the ways in which the tribe perceives particular situations as indicating aggressive intent, and the ways they cope with some of these acts. Only the field-worker could say what further light has been thrown on the understanding of the behavior of this tribe by organizing the data in terms of the frustration-aggression hypothesis.

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SOME NEW PUBLICATIONS

North America

Brew, J. O. *Preliminary Report of the Peabody Museum Awatovi Expedition of 1937* (American Antiquity 5, No. 2. pp. 1–3–114, 3 pls. Menasha, 1939).

Cummings, Byron. *Apache Puberty Ceremony for Girls* (The Kiva 5, No. 1. pp. 1–4. Tucson: Arizona Archaeological and Historical Society, 1939).

Embree, Edwin R. *Indians of the Americas* (xi, 260 pp., illus. $2.75. Boston: Houghton Mifflin, 1939).

Greenman, Emerson F. *The Wolf and Furton Sites, Macomb County, Michigan* (Occasional Contributions from the Museum of Anthropology 8. 34 pp., 8 pls. Ann Arbor: University of Michigan Press, 1939).

Kluckhohn, Clyde and Paul Reiter (eds.) *Preliminary Report on the Excavations, Bc 50–51. Chaco Canyon, New Mexico* (190 pp., 14 pls., 15 figs., 9 maps. $1.00. Albuquerque, University of New Mexico Press, 1939).

Kroeber, A. L. *Culture Elements Distributions: XI Tribes Surveyed* (Anthropological Records 1, No. 7 pp. 435–440, map. Berkeley: University of California Press, 1939).

Liveley, C. E. and C. L. Gregory. *Rural Social Areas in Missouri* (University of Missouri Research Bulletin 305. 39 pp. Columbia, 1939).

Mera, H. P. *Style Trends in Pueblo Pottery in the Rio Grande and Little Colorado Cultural Areas from the 16th to the 19th Century* (Memoirs of the Laboratory of Anthropology 3. vi, 31 pp., 67 pls. Sante Fé, 1939).

Rossignol, M. *Property Concepts among the Cree of the Rocks* (Primitive Man 12, No. 3. pp. 61–70. Washington: Catholic Anthropological Conference, 1939).

Speck, Frank G. *Catawba Religious Beliefs, Mortuary Customs, and Dances* (Primitive Man 12, No. 2. pp. 21–56. Washington: Catholic Anthropological Conference, 1939).

Stephen, Alexander MacGregor. *Hopi Indians of Arizona* (Masterkey 13, No. 6. pp. 197–204. Los Angeles: Southwest Museum, 1939).

Uhlenbeck, C. C. *Grammatische invloed van het Algonkisch op het Wiyot en het Yurok* (Niewe Reeks 2, No. 3. pp. 41–49. Amsterdam: Noord-Hollandsche Uitgevers Maalschappig, 1939).

Vaillant, George, C. *Indian Arts of North America* (xiii, 63 pp., 96 pls. $5.00. New York: Harper Bros., 1939).

Voegelin, C. F. *Shawnee Stems and the Jacob P. Dunn Miami Dictionary* (Prehistory Research Series 1, No. 8 pp. 289–341. Indianapolis: Indiana Historical Society, 1939).

Central and South America

Aguilar, Juan de. *Arte de la lengua Quichua general de indios del Perú, 1690* (Universidad Nacional, Publicación 252. 102 pp. Tucumán, 1939).

Altieri Radames. *La Gramatica Yunga de F. de la Cerrera* (Universidad Nacional, Publicación 257. 26 pp. Tucumán, 1939).

Altieri, Radames. *Sobre un Kipu peruano* (Universidad Nacional, Publicación 248. 14 pp. 2 pls. Tucumán, 1939).

Altieri, Radames. *Términos de parenteseo en la familia Yunga* Universidad Nacional, Publicación 258. 12 pp. Tucumán, 1939).

Antze, Gustav. *Einige neue Muschelschnitzereien un Muschelmosaiken aus Nasca, Peru)*

Mitteilungsblatt 9. pp. 5–8, 2 pls. Hamburg: Deutsche Gesellschaft für Völkerkunde, 1939).

Dieseldorff, Erwin P. *Los secretos contenido en el tablero del templo de la Cruz de Palenque* (16 pp., 3 pls., 5 tabs. Mexico, D. F.: El Sobre Azal, 1939).

Dietschy, Hans. *Die Amerikanischen Keulen und Holzschwerter* (xix, 196 pp., 4 pls. Leiden; E. J. Brill, 1939).

Flores, Jesus Romero. *Nomenclature Geográfica de Michoacan* (39 pp. Morelia: Sociedad Geografia e Historia de Michaocan, 1939).

Haeckel, Josef. *Zweiklassensystem Männerhaus und Totemismus in Südamerika* (Zeitschrift für Ethnologie 70, No. 6. pp. 426–454, 3 maps. Berlin: Julius Springer, 1939).

Leão, Josias. *Mines and Minerals in Brazil* (239 pp. Rio de Janiero: Centro de Estudos Economicos, 1939).

Nash, Ruth Cutter. *Calendrical Interpretation of a Golden Breastplate from Peru* (Indian Notes and Monographs 52. pp. 1–12, 1 fig. New York: Heye Foundation, 1939).

Schellhas, Paul. *Zur Entzifferung des Mayaheiroglyphen* (Mitteilungensblatt 9. pp. 55–71. Hamburg: Deutsche Gesellschaft für Völkerkunde, 1939).

Africa

Beemer, Hilda. *Notes on the Diet of the Swazi in the Protectorates* (Bantu Studies 13, No. 3. pp. 199–236. Johannesburg: The University of the Witwatersrand Press, 1939).

Culwick, G. M. *New Ways for Old in the Treatment of Adolescent African Girls* (Africa 12, No. 4 pp. 425–432. London: Humphry Milford, 1939).

Doke, C. M. *European and Bantu Languages in South Africa* (Africa 12, No. 3. pp. 308–319. London: Humphrey Milford, 1939).

East, Rupert. *Akiga's Story: The Tiv Tribe as seen by one of its Members* (xiii, 436 pp., 24 pls., map. $7.00. New York: Oxford University Press, 1939).

Ellenberger, Vivien. *History of the Batlôkwa of Guberones* (Bantu Studies 13, No. 3. pp. 165–198, 2 pls., tab. Johannesburg: University of the Witwatersrand Press, 1939).

Masson, G. *Médecins et sorciers en pays Bamiléké* (L'Anthropologie 49, Nos. 3–4. pp. 313–332. Paris: Masson & Cie, 1939).

Mekeel, Scudder. *Social Administration of the Kru* (Africa 12, No. 4. pp. 460–468. London: Humphrey Milford, 1939).

Krige, J. D. *The Significance of Cattle Exchanges in Lovedu Social Structure* (Africa 12, No. 4. pp. 383–425. London: Humphrey Milford, 1939).

Raum, Otto F. *Educational Psychology in the Speech of the Chaga* (Bantu Studies 13, No. 3. pp. 237–242. Johannesburg: University of the Witwatersrand Press, 1939).

Santos Junior, J. R. *Mission anthropologique de Mozambique* (Revue anthropologique 49, Nos. 7–9. pp. 170–183. Paris: Émile Nourry, 1939).

Oceania

Elkin, A. P. *The Australian Aborigines* (xi, 258 pp. 21 pls. 8/6. London: Angus and Robertson, 1939).

Emory, Kenneth P. *Archaeology of Mangareva and Neighboring Atolls* (Bishop Museum Bulletin 163. 76 pp., 6 pls. Honolulu, 1939).

Kroll, H. *Sagen und Märchen der Bola* (Zeitschrift für Ethnologie 70, No. 6. pp. 37–425. Berlin: Julius Springer, 1939).

Mead, Margaret. *From the South Seas* (including *Coming of Age in Samoa, Growing Up in New Guinea, Sex and Temperament,* and a new *Prefatory Essay*) (xxxv, 1023 pp. $4.00. New York: Wm. Morrow, 1939).

Speiser, F. *Melanesien und Indonesien* (Zeitschrift für Ethnologie 70, No. 6. pp. 463–481. Berlin: Julius Springer, 1939).

Europe and Asia

Andersson J. G. *Topographica and Archaeological Studies in the Far East* (Museum of Far Eastern Antiquities, Bulletin 11. 110 pp., 60 figs., 56 pls., 9 maps. Stockholm, 1939).

Embree, John F. *Suye Mura: A Japanese Village* (xxvii 354 pp., 18 pls., 4 figs., 7 maps. $3.00. Chicago: University of Chicago Press, 1939).

Erixon, Sigurd. *Türwächter und Prangfiguren* (Folk Liv III. pp. 44–88., 6 pls., 23 figs. Stockholm: Bokforlags Aktiebolaget Thule, 1939).

Fuchs, Stephan. *Birth and Childhood among the Balihis* (Primitive Man 12, No. 3. pp. 71–84. Washington: Catholic Anthropological Conference, 1939).

Izikowitz, Karl Gustav. *Etnografiska forskningar i Fransha Indokina* (Ymer 51, No. 3. pp. 202–222, 10 figs. Stockholm: Generalstabens Litografiska Anstalt, 1939).

Schlaginhaufen, Otto. *Zur Kenntis der Bevölkerung von Schaugnau im Oberemmental* (Mitteilungen der Geographisch-Ethnographischen Geseilschaft 39. pp. 223–294. Zürich, Aschman und Scheller, 1939).

Wakarelski, Chr. *Brunnen und Wasserleitungen in Bulgarien* (Folk Liv III, pp. 5–43, 20 pls. 21 figs. Stockholm: Bokforlags Aktiebolaget Thule, 1939).

Prehistory

Austen, Leo. *Megalithic Structure in the Trobriand Islands* (Oceania 10, No. 1. pp. 30–53, 1 pl., 9 figs. Sydney: Australian National Research Council, 1939).

Blanc, A. C. *L'Homme Fossile du Mont Circe* (L'Anthropologie 49, Nos. 3–4. pp. 253–264, 3 figs. Paris: Librairie Masson, 1939).

Bryan, Kirk. *Stone Cultures near Cerro Pedernal and their Geological Antiquity* (Bulletin of Texas Archaeological and Paleontological Society, Vol. II. pp. 9–42, 10 pls. Abilene, 1939).

Childe, V. Gordon. *The Dawn of European Civilization* (New edition enlarged and completely rewritten) (xviii, 351 pp., 155 figs., 4 maps. $5.00. New York: Alfred A. Knopf, 1939).

Childe, V. Gordon. *Prehistoric Archaeology of the Dundes District* (Scientific Survey of the Dundee and District. pp. 2–8. Dundee: David Winter & Son, 1939).

Childe, V. Gordon and Walter G. Grant. *A Stone Age Settlement at the Braes of Ringo, Ronsay, Orkney* (Proceedings of the Society of Antiquaries of Scotland 13, Series 6. pp. 6–31, 22 pls., 9 figs. 1939).

Delcroix, R. and R. Vaufrey. *Le Toubien de Guinée Française* (L'Anthropologie 49, Nos. 3–4. pp. 265–312. 19 figs. Paris: Librairie Masson, 1939).

Eiseley, Loren C. *Pollen Analysis and its Bearing upon American Prehistory* (American Antiquity 5, No. 2. pp. 115–139. Menasha, 1939).

McCown, Theodore D. and Sir Arthur Keith. *The Stone Age of Mount Carmel: The Fossil Remains from the Levalloiso-Mousterian, Vol. II.* (xxiv, 390 pp., 28 pls., 88 tabs., 247 figs. $20.00. New York: Oxford University Press, 1939).

Octobon, le Commandant. *Grotte de Bedeilhac, Ariège* (Revue anthropologique 49, Nos. 7–9. pp. 221–235, 8 figs. Paris: Émile Nourry, 1939).

Schneiter, Carl. *Die Skelette aus den Alamannengräbern des Zürcksee* (148 pp., 8 pls. Zürich: Anthropologischen Institut der Universität, 1939).

Ulrich, H. *Les crânes néolothique du Bas-Rhin* (Revue anthropologique 49, Nos. 7–9. pp. 184–220, 4 pls., 4 tabs., 12 figs. Paris: Émile Nourry, 1939).

Weinert, Hans. *Africanthropus njarasensis* (Zeitschrift für Morphologie und Anthropologie 39, No. 2. pp. 252–308, 3 pls., 14 figs. Stuttgart: Erwin Nägele, 1939).

Wintemberg, W. J. *Eskimo Sites of the Dorset Culture in Newfoundland* (American Antiquity 5, No. 2. pp. 83–102, 2 pls., map. Menasha, 1939).

Physical Anthropology

Boas, Franz. *Genetic and Environmental Factors in Anthropology* (The Teaching Biologist 9, No. 2 pp. 17–20. Brooklyn: New York Association of Biology Teachers, 1939).

Boyd, William C. *Blood Groups of American Indians* (American Journal of Physical Anthropology 25, No. 2. pp. 215–235, i fig. Philadelphia, 1939).

Candela, P. B. *Blood Group Tests on Stains, Mummified Tissues, and Cancellous Bone* (American Journal of Physical Anthropology 25, No. 2. pp. 187–214. Philadelphia, 1939).

Gini, Corrado. *Les bases de la biotypologie et les critérium du recrutement militaire* (Revue anthropologique 49, Nos. 7–9. pp. 153–169. Paris: Librairie Emile Nourry, 1939).

Trotter, Mildred. *Classification of Hair Color* (American Journal of Physical Anthropology 25, No. 2. pp. 237–260. Philadelphia, 1939).

Theory

Devereux, George. *The Social and Cultural Implications of Incest among the Mohave Indians* (Psychoanalytic Quarterly 8, No. 4. pp. 510–533. 1939).

Haeckel, Josef. *Über Wesen und Ursprung des Totismus* (Anthropologischen Gesellschaft 69, No. 3. pp. 243–260. Vienna, 1939).

Kroeber, A. L. *Totem and Taboo in Retrospect* (American Journal of Sociology 45, No. 3. pp. 446–451. Chicago: University of Chicago Press, 1939).

Milke, Wilhelm. *Über Kategonen der funktionellen Ethnologie* (Zeitschrift für Ethnologie 70, No. 6. pp. 481–498. Berlin, Julius Springer, 1939).

Miscellaneous

Coleman, Laurence Vail. *The Museum in America* (3 Vols. 730 pp., 50 pls. $7.50. Washington: American Association of Museums, 1939).

Ellis, Havelock. *Freud's Influence on the Changed Attitude toward Sex* (American Journal of Sociology 45, No. 3. pp. 309–317. Chicago: University of Chicago Press, 1939).

Gurvitch, Georges. *The Sociological Legacy of Lucien Levy-Bruhl* (Journal of Social Philosophy 5, No. 1. pp. 61–70. New York, 1939).

Hrdlicka, Ales. *The Criminal* (Journal of Criminal Psychopathology 1, No. 2. pp. 87–90. Woodburn, N. Y., 1939).

Hooton, Earnest A. *The Twilight of Man* (xii, 308 pp., 12 pls., 8 figs. $3.00. New York: Coward McCann, 1939).

Linton, Ralph. *The Effects of Culture on Mental and Emotional Processes* (Research Publications of the Association for Research in Nervous and Mental Disease, Vol. 19, pp. 293–304. New York, 1939).

Murdock, G. P., G. S. Ford, A. E. Hudson, R. Kennedy, L. W. Simmons, J. W. M. Whiting. *Guía para la investigación etnológica* (Traducción de Radames A. Altieri) (Publication 259 de Universidad du Tucumán, 1939).

Shapiro, H. L. *Anthropology in the Modern World* (Teaching Biologist 9, No. 2. pp. 21–24. New York, 1939).

Slaughter, Gertrude. *Calabria: The First Italy* (xiv, 330 pp. 54 illus. Madison: University of Wisconsin Press, 1939).

Sims, Newell Le Roy. *The Problem of Social Change* (477 pp. New York: Thomas Crowell, 1939).

Wallace, Henry, Franz Boas, Hadley Cantril, Wm. Hamm. *A Genetic Basis for Democracy: A Panel Discussion on Race and Race Prejudice* (16 pp. mimeo. $.40. New York: American Committee for Democracy and Intellectual Freedom, 1939).

Zilboorg, Gregory. *Sociology and the Psychoanalytic Method* (American Journal of Sociology 45, No. 3. Chicago: University of Chicago Press. 1939).

BRIEF COMMUNICATIONS

A NOTE ON THE NAVAHO VISIONARY

The term *bił 'áxáłtnį́*, in its literal meaning, denotes "one to whom it is done so." In legendary accounts, however, *bił 'áxáłtnį́* is a "visionary" whose experiences, in *ǰé·ʒɬ* "nightway," for instance, vest the hero with power to perform ceremonials in this chantway, and then to transfer that power to the Navaho people. Various informants are agreed that such terms as, *nixił 'áxo·ʒai*, do not really refer to the literal "things which happened to ye," but always connote "visions" such as we read of them in legendary accounts.

Legends may be said to influence Navaho behavior to a certain degree. How, then, did the tribe respond to "power obtained by dreams and visions?" Popular usage presents this common phrase: *bili· bił naxayá* "a ceremonial obtained by dream," which may be reduced to: *bił naxaγá* "dream ceremonial," meaning that the ceremonialist or "singer" performs a ceremonial complex of which he dreamt. Phonetically *bił* "dream or sleep" and *bił* (*bi-* plus *yił*) "with or to him" are not differentiated, but the context discloses the connotation.

At any rate, Frank Walker, an old interpreter, 66 years of age, tells me that *ǰłzí łižintĥ biγe'* "son of the late Black Goat," known as "Mose Blackgoat," had tried to popularize a ceremonial which he had learned in a dream while sleeping in a cave. He died shortly afterwards and that settled his claim to authoritative innovation.

Another adventurer in the realm of Navaho ceremonialism was known as *na·kai ʒá·n* "Mexican John," who dreamed of a flood which would wipe out the tribe. But the flood never appeared within the arid zone of Navaho land, and, somehow or other, Mexican John "was killed."

The lesson is, that dreams and visions may have been a source of healing power for legendary heroes. The ordinary Navaho, however, should not presume to obtain such powers by dreams and visions. It spells certain death!

BERARD HAILE

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SIMILARITY BETWEEN THE MIXCO (GUATEMALA) AND THE YALALAG (OAXACA, MEXICO) COSTUMES

In 1935 I accompanied Miss Matilda Geddings Gray to Guatemala to make the collection of native Indian custumes which she presented to the museum of the Middle American Research Institute of Tulane University. When making this collection, we made a number of interesting observations.

The costumes of the Indians of Guatemala are characteristic of each village, and the Indians of one village will, under no circumstance, wear the costume of another village. It is therefore easy to recognize Indians from the different villages of the country.

As a general rule, the Indians have an every-day costume and the Cofradía or Ceremonial costume, which they wear only on feast days (mostly religious feasts), for wedding ceremonies, christenings, etc. The Cofradía is a religious organization, resembling somewhat the Catholic organizations in this country, such as Holy Name Society, Sodality of the Children of Mary, etc. In Guatemala, the number of Cofradías and members of each Cofradía vary according to the size of the town. In these organizations, both men and women hold office, usually for one year, the members being elected from among the most prominent Indians of their town or village. The Alcaldito, or Indian Mayor, is chosen from men belonging to the Cofradías. The duties of the Cofrades are to keep the church clean, furnish fresh pine-needles for the church floor, organize processions under the Priest's directions, meet expenses of banquets given on certain feast days, etc. Most of the Cofrades have in their own houses a small chapel or "Oratorio" in a separate room, where on the altars, they have statues of the Saints, candles, flowers, and other religious paraphernalia. The Indians usually light a candle and pray here when they come to market, and in addition to visiting the church, they usually make the round of all the Cofrades' chapels in the village.

The Ceremonial costume is always somewhat different from the every-day outfit. The difference may be an extra *huipil* worn on the head like a shawl, or it may be simply a number of extra pieces added to the every-day costume; but in all cases the ceremonial costume has a predominance of purple color, called *pûrpura*, and is always made with the best material and best workmanship that the locality can produce.

Among the Guatemala Indian costumes perhaps the least interesting is the Mixco costume. Mixco, in close proximity to Guatemala with a splendid automobile road, has modernized its Indians to such an extent that hardly anything is left of their original costume. The men wear *ladino* outfits, the women their *jaspe* (variegated) cotton skirts, woven on foot looms, with *huipiles* (blouses) made of the same material, or handwoven, without trying to keep to any particular color, design or pattern; but the ceremonial costume, quite different from their every-day outfit, has two very interesting items which I shall point out after giving a short description of this costume:

The ceremonial costume usually consists of a *jaspe* skirt, in bright vertical stripes of green, blue, red, white, yellow and black, and horizontal stripes in lighter threads. The skirt is bound at the bottom with black braid, and trimmed with velvet ribbons $\frac{3}{4}$ of an inch wide, four of them, about an inch apart and starting about 7″ from the bottom. The fullness of the skirt is pleated at the waist to the back. On this skirt tucks are taken in to make it shorter to suit the wearer.

The belt, woven by hand, is about $1\frac{1}{2}$″ wide, the edges trimmed with lines about $\frac{1}{8}$″ thick, first red, then green and orange. The woof is white cotton and the warp

red, green and orange cotton, with purple wool, which makes a heavy, raised design. This design does not follow a regular pattern, for the figures and designs are repeated without a regular order. The designs consist mainly of a five inch figure of a Zapotec dancer with a high feather headdress as used by those Indians in their religious dances, and designs about 2½″ of small dancers facing each other, small triangles, rosettes, two figures holding hands, deer, etc. The belt ends on one side with a fringe about 12″ long, the other end being plain. The belt in our collection is about 10′ long and 1¼″ wide.

The *huipil* or blouse is usually woven on a foot loom, or sometimes all by hand, with bands of red design, and yellow and purple stripes. It is trimmed around the neck and arm holes with cheap white lace and has a wide band of plain, white material at the bottom. This blouse is worn over the skirt.

A lace shawl, in triangular effect, is worn over the shoulders. This is usually made of a piece of cheap German lace curtain.

The headdress, called *Tocoyal* by the Guatemala Indians and worn only with the ceremonial costume, is made of heavy woolen threads (about ¼″ thick) 108 to each side. Of these, 32 threads are purple, 43 reddish-purple, 30 black, two red and one green. The threads are about 60″ long, ending in loops; the green making a tassel, each thread finished in a knot and a few loose threads. All these threads are divided in strands of six threads each. There is a rosette of bright pink ribbon on the back of the headdress. The whole piece weighs about 2½ pounds and is worn wrapped around the head with an enormous knot in front, the ends hanging over the back of the head, the whole looking like a turban (Fig. 1).

The two striking items of this costume are the belt and the headdress. Both are imported from Oaxaca, Mexico, by Mexican Indians coming to the fiesta of the Black Christ of Esquipulas. Mrs Lilly de Jongh Osborne, refers to this belt in her book, *Guatemala Textiles*, Publication 6 of the Middle American Research Series, p. 67.

In San Juan Yalalag, a little village northeast of Oaxaca city, on the mountain range Ixtlán de Juarez, women wear similar headdress and belts identical to those worn by Mixco women. Both items, as stated before, are imported from Oaxaca into Mixco. This particular belt is also worn by Indian women of several other villages through the State of Oaxaca, such as the Mixes, etc.

The skirts of the Yalalag women are made of hand-woven material, either plain white, or white with narrow horizontal stripes of tan, about three and a half yards long, worn wrapped around the waist and kept in place by a belt. They are usually made of two narrow pieces sewn together to give the necessary length, usually to the ankles.

The belt is exactly like the one worn by Mixco women, therefore the description of the belt used in Mixco will hold good for this item.

The *huipil* or blouse resembles the Mixco blouse only in the length and in that it is worn over the skirt. The Yalalag *huipil* is a splendid sample of the weaver's art, made of plain, soft white cotton, about 20″ wide, beautifully put together with exquisite small stitches front and back, and with a weaving of heavy cotton about

FIG. A. Mixco costume, Mixco, Guatemala.
FIG. B. Yalalag costume, Oaxaca, Mexico.
FIG. C. Clay figurine from Oaxaca, Mexico.
FIG. D. Clay figurine from Yanhuitlan, Oaxaca, Mexico.

11″ wide running straight across the shoulders, making a heavily raised design. A few inches below the neckline, front and back, there is a very simple design worked out with heavy dark blue silk, with ends about 14″ hanging loose on each side like two tassels. The blouse is about 35″ long, finished at the bottom with another double line of heavy cotton with a raised effect to match the ornamentation on the shoulders. The hem is finished with very narrow stitches resembling buttonhole stitch, in blue, red, purple and green and yellow silk, about 1½″ in each color, with a tiny design on the front and back seam. Some of these blouses or *huipiles* are embellished with narrow stripes, about an inch wide, embroidered in colored silk, running front, back and sides from neckline and armholes to the bottom.

The headdress or *Tlacoyal*, as it is called in Oaxaca, is very similar to the headdress worn by the Mixco women for ceremonial purposes. This Yalalag headdress (Fig. 2) is made of black heavy wool threads, about seven to 10 feet long, about 42 threads to each side, then a few threads wrapped around these, until a roll about 2½″ in diameter is obtained. This is twisted around the head in turban-like fashion, and the loose ends, tassel-like, are left to hang over the back of the head.

In the Guatemala Indian costumes there is no doubt but that there still exist a number of features which have been handed down through several generations from pre-Conquest times. In those days, the color and design of their costumes distinguished the different ranks in the nobility and priesthood, as well as the tribal divisions. Some traces of this can still be found by referring to the codices, frescoes, and carvings on walls of ruined temples and palaces, on pottery, etc. In many costumes we find the Spanish influence, and on this or that one, we can trace a Spanish peasant garb, a monk's habit, a military coat, etc. as worn by the Spaniards at the time of the conquest. Of course, it would be rather difficult, at this late date, to attempt to trace the original significance of design and color in present-day Guatemala Indian costumes and discover its true tribal or religious significance. Modern influence can be found in these costumes, notwithstanding the fact that each village tries, as much as possible, to keep intact its traditional dress, and the significance of design, color, etc. is lost in the dim past.

Nevertheless, the belt and headdress of the Mixco costume, imported from Oaxaca, and so similar to the Yalalag belt and headdress, give rise to quite a bit of speculation. Yalalag and Mixco are separated by several hundred miles of rough, dangerous mountain trails through which the Oaxaca merchants bring their goods to Guatemala, probably the same trails as used by the Mexican traders before the Conquest.

Mixco in Guatemala, founded by the Spaniards in 1525, after the destruction of Mixco el Grande[1] was settled by Mixco Indians left after the battle, and probably by Mexican Indians brought by Alvarado. Mixco El Grande was founded by Indians who came from Cuzcatlan, which in turn, was founded by Mexican Indians.[2]

[1] Ixtlixochitl, *Relaciones de Don Fernando de Alva* (Mexican Antiquities by Lord Kingsborough, Vol. IX, 1898), p. 458.

[2] José Milla, *Historia de la América Central* (Vol. I, 1897), p. 154.

We have in the Museum of the Middle American Research Institute, a clay figurine from Oaxaca (Fig. 3), and a photograph of a Zapotec clay figurine from Yanhuitlán, now in the museum at Oaxaca, Mexico (Fig. 4) which show a headdress very similar to that worn by modern Yalalag and Mixco women. Should these data lead us to believe that the Mixco and the Yalalag women belong to the same original tribe and come from the same place? Could we safely assume that the preservation of these two items in their costume, for which they give the explanation "*es el costumbre*" "*así lo hacían los antiguos*" ("it is the custom" "it was done thus by the ancients") point to a faint link with the dim and distant past connecting their origin to that of the people of Yalalag? Perhaps like the salmon which swims miles against strong currents, urged by a blind instinct leading them back to spawn at their birth-place, the Indians of Mixco, for reasons which they themselves do not understand, try to keep alive this last connecting link with a people which may have been their own before they settled in Central America.

Small details like these, which we find when coming in direct contact with the Indians, open vast fields for speculation, and it would be fascinating and interesting to be able to trace and explain these questions beyond doubt.

DOLORES MORGADANES

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A BALL GAME AT SANTO DOMINGO

This particular game seems to be played today only at Santo Domingo Pueblo and has been referred to by only one other writer.[1] It is very probable that it is still played at other Keres Pueblos although Leslie A. White says he has not run across it.[2] However, we do have knowledge of its past existence even if it is not played at the present at Acoma.[3] It also existed on the First Mesa, as miniature

[1] "A game in which a ball is rolled between two stakes is played on Easter Monday." Francis Densmore, *Music of Santo Domingo Pueblo, New Mexico* (Southwest Museum Papers, no. 12, 1938), p. 33.

[2] Personal communication, May 9, 1939.

[3] In a personal communication of May 2, 1939 Dr Elsie Clews Parsons gave me the following information relative to Acoma: "In the Emergence myth recorded by Stirling, an unpublished manuscript which we are editing. I find this passage: 'In the court two sticks are placed just wide enough apart to let the ball pass through. The players stand about 75 feet away. They use a broad stick to shove the ball. The game is to roll the ball between the sticks. This game is for gambling. They bet one turquoise bead on a game. They found this very interesting because it was the first game of chance.' Iatiku, the Earth Mother planned this game that is called *Tokamoti* because she wanted to use the wooden balls which are used by the Kachina for making lightning (thunder) by striking them together. Iatiku told the War Chief to ask the Kachinas the next time they came to bring him these balls. The Kachina clown-scouts taught the War Chief how to play the game." Also see Elsie Clews Parsons, *Pueblo Indian Religion* (University of Chicago Publications in Anthropology, Chicago, 1939), p. 981.

implements of this game appear in the Niman Kachina.[4] I observed the game on Easter Sunday (April 9, 1939) and on the following Wednesday. I also heard it was played on the Wednesday before Easter. There is no reason to suspect, however, that there are any days during this period when it is not played. Townspeople said the game was played "this time of year." The game is played only in the morning and evening.

A long court bordered by large timbers is used. It is about 36 feet long and 10 feet wide.[5] At one end there are two willow stakes (1½ inches in diameter) driven into the ground 8 inches apart and projecting for about 15 inches. The players use four wooden balls carved out of pine. They are about 7 inches in diameter and while they are not perfectly round, they are well made considering the tools used. Two of them are marked with an X (cross) cut into them. The players endeavor to take good care of them as they are difficult to make. One pair was pointed out as having been made two years before and both balls were still in fairly good shape and will probably be used for another year or two at the least. Completing the equipment are four paddles which somewhat resemble the battens used in weaving belts. They vary in size and proportions but the general shape is the same. They are 9 to 14 inches long. Two of the paddles are also marked with an X (cross).

For the use of the children there are miniature courts, balls, and paddles. Sometimes the children merely use two stakes without any enclosing court; and again they sometimes use the large courts.

There are four players. Two men are partners and one pair takes the marked balls and paddles and the other takes the plain. One man starts the game by rolling his ball for the space between the stakes. If he succeeds in putting the ball between the stakes he get 2 points, and a new set starts. The other side does not get a chance to cancel the points gained. If he is unable to do this, his partner then throws and the other two partners follow. When this is done there are four balls scattered around the stake at the far end. The first player then places his paddle against the ball, and gives it a quick push. He usually tries to put his ball between the stakes (all balls must go in from the front end; i.e., from the end that is toward the starting point). However, if an opponent's ball is directly in line with the stakes, he will knock it out of the way with his own. As often as not, however, a player's ball ends up against the back timber without going through the stakes on the original roll and a man uses his first shot to get into position for a play between the stakes. His partner will then play, the others following in turn. One point is scored when a ball is rolled between the stakes under these circumstances. The players go to the end of the court and begin rolling again; the one who made the last score is the first to begin.

Sometimes a set will last a long time, as the players will spend more time and

[4] Elsie Clews Parsons (Ed.) *Stephen's Hopi Journal* (Columbia Contributions to Anthropology 23, New York, 1936), pp. 529, 573, 574, Figures 320–322. This was kindly called to my attention by Dr Parsons.

[5] In two courts observed the long axis was north and south.

effort trying to knock their opponent's balls out of the way than they will playing for the stakes.[6] They will often smooth a path for the ball, and even place their opponent's ball on a small dirt mound or "tee" in order to facilitate knocking it further. There are numberless tricks to this game and the skill required is great. Often when a ball is resting against the stake on the outside and to the back, the player can, with a deft push, spin it around the stake and between the two. That is, in sporting terminology, they put an "english" on the ball.

When men play it is usually for a game of 10 points with each pair of partners making bets with the other pair. Gambling seems to be a typical feature of this game.[7] When this game is being played by the men there is usually a large crowd of excited onlookers. In fact, in no other instance have I ever seen Pueblo Indians show so much excitement.

When children play, no score is set although they count points. On one particular occasion the author was watching some boys (no women or girls were ever seen playing) on the large men's court. Two of the boys were about 10 years old and the other two about 7 years old. Each larger boy had a small boy for a partner. Because the small boys were not strong enough, the older boys rolled the balls from the end for both themselves and their partners but the younger boy would play his own ball when it was near the stake. The children often went to more pains to guide the ball to the goal than did the men. Often when the older boys rolled the ball, the smaller partner would run along ahead of the ball scratching a line or smoothing the ground with his paddle towards the stakes and sometimes the ball would follow the path. When the children played there were usually others watching and a few adults encouraging them.

I was unable to get the native names of the game or of any of its implements. Probably there is some ceremonial significance attached to the game, since the townspeople would not answer questions or talk freely about the game. No information relative to its antiquity was obtained except that "the old men always played it."

JOHN M. GOGGIN

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NOTE ON *THE ALASKAN WHALE CULT AND ITS AFFINITIES*

In this paper,[1] which appeared in the AMERICAN ANTHROPOLOGIST in July, 1938, there were several omissions which the author wishes to supply at this time. In addition the author has obtained some new material.

One item, which extends the whale cult to include Labrador, linking it definitely

[6] This may have some bearing on the ceremonial object of mimetic thunder-making. Thunder balls are clashed together by the Rain Chiefs at Zuni. Parsons, *op. cit.*

[7] Dr Leslie A. White says that "games of skill and chance appear to be characteristic of Easter celebrations among the Keres." *Ibid.*

[1] Margaret Lantis, *The Alaskan Whale Cult and Its Affinities* (American Anthropologist, Vol. 40, No. 3, 1938), pp. 438–464.

with the cult elsewhere is this: While the men were out whaling, women and children remained quietly indoors.[2] Reference to the paper in the AMERICAN ANTHROPOLOGIST will show that this custom has been reported in every major area on the American mainland where whaling was practised.

The major omission is Veniaminov's account of whaling in the Aleutian Islands.[3] Veniaminov said the Aleut whaler (like the Kodiak hunter) either greased his lance-head with human fat or tied portions of human bodies to them, some part of the arm or finger being preferred. These were obtained from the mummies in caves. Sometimes a piece of clothing from such corpses or a widow's garments or poisonous plants might be fastened to the spear. The hunters who obtained such human charms were always fortunate in their hunting but met with an untimely death. The charms were kept in the kayak. As soon as a hunter had struck a whale with such a poisoned spear, he blew on his hands, went home immediately and stayed in a specially built hut for three days "without food or drink, and without touching or looking upon a female." [If a whale-hunter at any time when using amulets and charms touched a female "especially unclean," he "would be seized, before the stricken whale had yet expired, with violent nose-bleeding and swelling of the whole body, finally ending in insanity and death."] "During this time of seclusion he snorted occasionally in imitation of the wounded and dying whale, in order to prevent the whale struck by him from leaving the coast, and it would similarly suffer and quietly die. On the fourth day he emerged from his seclusion and bathed in the sea, shrieking in a hoarse voice and beating the water with his hands." Then he went to the locality where he thought the whale had washed ashore. (The Aleuts, like the Koniag, used a lance instead of harpoon and line in whale-hunting.) When the whale was found, the hunter cut out the part where the death wound had been inflicted and threw it away. If the whale was not found dead, the hunter returned home "and continued torturing himself."

The use of human remains, imitation of the whale and bathing in the sea, and use of a special hut prove that the Aleuts belonged with the Koniag and with what the author has called the southern center of the whale cult, especially the Nootka and Kwakiutl.

North of the Aleutians, up the west coast of Alaska between the Alaska Peninsula and Seward Peninsula, the beluga was hunted in some places, but large whales were not hunted. On Nunivak Island, half-way up this stretch of coast, not even the beluga was regularly hunted by modern Eskimos, although they were glad whenever they could catch a small whale of any variety in their seal-nets. In view of this absence of whaling and of the whale cult, it is interesting to find that in the ceremony preceding the first launching of kayaks for seal-hunting in the spring, *a human jawbone* was fastened to the kayak frame and left there for the spring hunting season (personal field notes).

In contrast with this, Mr Henry B. Collins Jr. informs the author that on St.

[2] Hawkes, *The Labrador Eskimo* (in Weyer, *The Eskimos*, 1932), p. 346.

[3] Veniaminov, *Notes from the Unalaska District* (Vol. 2, 1840), pp. 132–135.

Lawrence Island (north of Nunivak but south of Bering Strait), "the boat owner and harpooner took turns staying up all night guarding the umiak, to prevent anyone from touching it with a human bone or anything that had come into contact with a corpse." This probably explains the reference in the whale-cult paper to the Cape Prince of Wales harpooner and boat owner remaining outdoors all night. Just where the line of separation was, between these two attitudes regarding the effect of human remains in hunting, we cannot say definitely.

The full account of whaling ceremonies, tabus, amulets, etc. which Mr Collins secured on St. Lawrence Island (previously a blank so far as this subject is concerned) contains too many details to be given fully in this Note, although Mr Collins has kindly offered it. Such things as making offerings of food to the whale and showing it hospitality and the prestige of whaling are generically of the whale cult. In ritual procedure, St. Lawrence Island seems quite individual although it shares some element with the Diomede Islands and Cape Prince of Wales and some with the Siberian Eskimos, as one might expect. There seem to be no detailed specific resemblances to areas away from Bering Strait.

One point is noticeable: Apparently women could watch the progress of a whale hunt. They did not have to lie down or remove part of their clothing. This and similar requirements of the hunter's wife, to influence the game animals, were very numerous in the Nootka-Kwakiutl area. By imitative magic the wife helped her husband get mountain goat and other animals besides whales. This part of the cult, which reached to Labrador, belongs to the American side of Bering Sea, according to present data.

These items help fill in the blanks on the American side. Regarding the Asiatic distribution of the whale cult, there is still considerable work to be done. Perhaps someone else can supply the needed material there.

MARGARET LANTIS

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TEONANACATL, THE NARCOTIC MUSHROOM

After years of patient search the *teonanacatl*, a narcotic mushroom used in religious rites, has been located and identified. I have been able to trace the still persistent use of this and other narcotic fungi to the southern part of Mexico (Veracruz, Oaxaca) where in the summer of 1937 I obtained the first specimens of a slender, black mushroom which corresponded exactly to the description of Sahagun and which is still used to induce a state of great hilarity among the Mazatecs of Oaxaca, who regarded it as a holy arcanum not to be divulged to outsiders. The plant was identified by the Harvard Botanical Museum as *Panaeolus campanulatus* L. var. sphinctrinus (Fr.) Bresadola. Prof. C. G. Santesson of Stockholm stated to me that in the scanty material sent to him he could not detect the presence of an alkaloid.

In a botanical trip I made to the Mazatec country in 1938, in company with R. E. Schultes of the Harvard Botanical Museum, sufficient material was secured by

me to enable Prof Santesson to demonstrate the presence of a gluco-alkaloid similar in its actions to the one he had previously found in the narcotic seeds of Piule (*Rivea corymbosa*), which I had forwarded to him. The intoxicating effect lasts for hours but does not form a habit. Its Mazatec name *To-shka* (fuddle mushroom) has the same meaning as the Zapotec name *Beya-zoo* (honga borracho).

B. P. Reko

Tacubaya, Mexico

NOTES AND NEWS

RESEARCH ON PRIMITIVE CHILDREN

A new Handbook of Child Psychology is to be published under the editorship of Dr Leonard Carmichael. Dr Margaret Mead has been asked to prepare the chapter on *Research on Primitive Children* and is anxious to include all relevant materials, both published and unpublished. She will therefore be most appreciative if all those research workers who have material in this field will send her reprints (when possible), bibliographical references, and summaries of unpublished results which they would like to have included. (Where there are publication plans for the latter, please indicate.)

Some idea of the scope of the article may be obtained from the chapter on *The Primitive Child* in the earlier Handbook, edited by Carl Murchison, Clark University Press, 1931.

Dr Mead proposes to organize the discussion of methods around the following heads: direct observational techniques; projective methods; life histories and biographies; attempts to integrate theoretically methods of child training with adult personality types and the formal culture pattern. It will facilitate matters if those who send summaries of unpublished material will arrange their summaries under these headings. All material should be sent to Dr Margaret Mead, American Museum of Natural History, New York City, before May 1, 1940.

BRINTON PUBLICATIONS

Through the magnanimity of the heirs of the estate of the late Dr Daniel Garrison Brinton, who died in 1899, the Philadelphia Anthropological Society has recently received the remainder of his publications; these are offered for sale, the proceeds to be devoted to the publication of a Brinton Anniversary Volume.

The major part of the lot consists of unused, uncut, cloth-bound copies of Brinton's *Library of Aboriginal American Literature*, published between 1880 and 1890. Copies of the following numbers are available for sale:

2. *The Iroquois Book of Rites*
3. *The Comedy Ballet of Güegüence*
4. *A Migration Legend of the Creek Indians*
6. *The Annals of the Cakchiquels*
8. *Rig Veda Americanus*

There are also cloth-bound copies of *American Hero Myths*, 1882, and of *Nahualism*, 1894, 67 pp., cardboard bound.

In spite of the rarity of these works, with the desire to put them into the hands of bona-fide students and libraries at a reasonable figure, they will be sold at $3.50 each for numbers 2, 3, 4, and 6 of the Aboriginal Literature series, and for *American Hero Myths*; $2.00 for No. 8, the *Rig Veda Americanus;* and $1.00 for *Nahualism.* Orders should be sent to the University of Pennsylvania Press, Philadelphia.

There are also a very few copies of many reprints of Brinton's shorter articles.

Students and libraries having especial interest in, and need of, certain of these are invited to request them of J. Alden Mason, University Museum, University of Pennsylvania, Philadelphia. There will, of course, be a slight charge for these, mainly to cover the cost of postage.

INDEX TO SCHOOLCRAFT'S *INDIAN TRIBES*

The monumental six-volume work by Henry R. Schoolcraft entitled *Historical and Statistical Information Respecting the History, Condition and Prospects of the Indian Tribes of the United States* which was published in 1851–1857, represents the first systematic attempt on the part of the Federal Government to study the ethnology and archeology of the North American Indians. Because of this fact and because of the early date at which the information was collected, it will always remain a most valuable source of information on American Ethnology.

While this report has proved an important reference work on American Indians for nearly ninety years, its usefulness has been greatly hampered because of the fact that heretofore no index has been available. Mrs F. S. Nichols of the editor's office of the Bureau of American Ethnology has now completed an index consisting of about 22,000 entries on cards, which is available in its present form to ethnologists, librarians, and other workers who may wish to make use of it.

Those who cannot consult it in person may write to the Editor's Office, Bureau of American Ethnology, Smithsonian Institution, and information requested will gladly be furnished by mail.

MICROFILM SETS OF PERIODICALS

The Committee on Scientific Aids to Learning, President Conant of Harvard, chairman, has made a grant to cover the cost of making a microfilm master negative, on the most expensive film, of sets of volumes of scientific and learned journals.

This permits the non-profit Bibliofilm Service to supply microfilm copies at the sole positive copy cost, namely 1 cent per page for odd volumes, or a special rate of ½ cent per page for any properly copyable 10 or more consecutive volumes.

The number of pages will be estimated on request to: American Documentation Institute, care offices of Science Service, 2101 Constitution Ave., Washington, D. C.

INTERNATIONAL CONGRESS POSTPONED

Ference von Tompa, President of the International Congress of Prehistoric and Protohistoric Sciences, announces that the third session of the Congress which was to have been held in Budapest during the summer of 1940 has been postponed pending the establishment of peace in Europe. The American members of the Permanent Council of the Congress are: A. L. Kroeber, University of California; George Grant MacCurdy, Yale University; Harriett M. Allyn, Mount Holyoke College; and Carl E. Guthe, University of Michigan.

RECORD OF PH.D. THESES

Beginning with its October issue, THE AMERICAN ANTHROPOLOGIST will print an annual list of Ph.D. theses dealing with anthropological subjects which have been accepted by institutions in the United States and Canada. It is hoped that members of the Association will cooperate by sending titles of theses accepted during 1939–40 together with author's name, name of institution granting degree, and library at which thesis can be consulted. Titles of theses accepted prior to 1939, or now in preparation, cannot be published, while titles received after June 15, 1940, cannot be included in this year's list. It is hoped that this new activity of the ANTHROPOLOGIST will prevent unnecessary duplication of research, aid in the dissemination of knowledge and assist research workers with similar interests to establish contact with each other.

COMMITTEE ON EXCHANGE OF PUBLICATIONS BY INDIVIDUALS

Members of the American Anthropological Association, the American Folk-Lore Society, the Society for American Archaeology, and the American Association of Physical Anthropologists, may apply for reprints of publications in the AMERICAN ANTHROPOLOGIST, the *Journal of American Folk-Lore*, *American Antiquity*, the *American Journal of Physical Anthropology*, and the *International Journal of American Linguistics*, to Dr. Elsie Clews Parsons (320 East 72 St., New York City), Chairman of the Committee on Exchange of Publications by Individuals, A A A. The Committee will endeavor to act as a clearing house not only for reprints but, whenever possible, for other publications by members of the respective societies.

ANNUAL MEETING OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION, 1940

It was unanimously voted by the Council at the 1939 meeting in Chicago, Illinois, to hold the next meeting of the American Anthropological Association in Philadelphia, Pennsylvania. Invitations were submitted by the University of Pennsylvania, University of Pennsylvania Museum, The Academy of Natural Sciences of Philadelphia, and the Philadelphia Anthropological Association.

President John M. Cooper has appointed the following committees for the 1940 meeting:

Nominating Committee: Leslie Spier, *chairman*, Fay-Cooper Cole, Diamond Jenness.

Within three months of his election the President shall appoint a Nominating Committee of three members and transmit the names of the personnel of this Committee to the Editor, who shall publish the names in the number of the AMERICAN ANTHROPOLOGIST which appears next after the time of election, with an invitation for suggestions; after considering such suggestions the Nominating Committee shall report its slate to the Council, which shall pass on the recommendations, with such changes as are deemed advisable, to the annual meeting. (From the Minutes

of the Pittsburgh meeting, December 1934, AMERICAN ANTHROPOLOGIST, Vol. 37, No. 2, 1935, p. 333.)

Program Committee: Julian H. Steward, *chairman*, Carl E. Guthe, W. M. Krogman, F. M. Setzler.

At the 1937 meeting of the Council it was voted to give the Program Committee power to set the date and to call for only *abstracts* of papers instead of the full papers to be included on the program, and furthermore to empower this committee to demand a full paper when they were unable to judge the quality from the abstract alone (cf. AA, Vol. 40, p. 297, 1938).

Committee on Local Arrangements: Frank G. Speck, *chairman*, J. Alden Mason, Edgar B. Howard, A. I. Hallowell, D. S. Davidson, H. Newell Wardle, H. Wieschhoff.

Notes on attendance at the Annual Meeting in Chicago, 1939:

Total registration	363
Annual Dinner	205
Complimentary Luncheon	202

FRANK M. SETZLER, *Secretary*

EIGHTH AMERICAN SCIENTIFIC CONGRESS

The Eighth American Scientific Congress will be held in Washington, D. C. from May 10 to May 19 inclusive.

The meetings of the Anthropological Section will be held May 14, 15, and 16. The tentative subjects being:

May 14 Morning. The Peopling of the New World
Afternoon. Recent Low Cultures
May 15 Morning. Large Operations in Archeology and Ethnology
Afternoon. Special Techniques in Archeology and Ethnology
May 16 Morning.
Joint Session: Anthropologists, Agriculturalists, Geographers and Historians
Subject: Social Changes in Indian America, Ancient to Modern Times.

HERBERT J. SPINDEN
Chairman Anthropology Section